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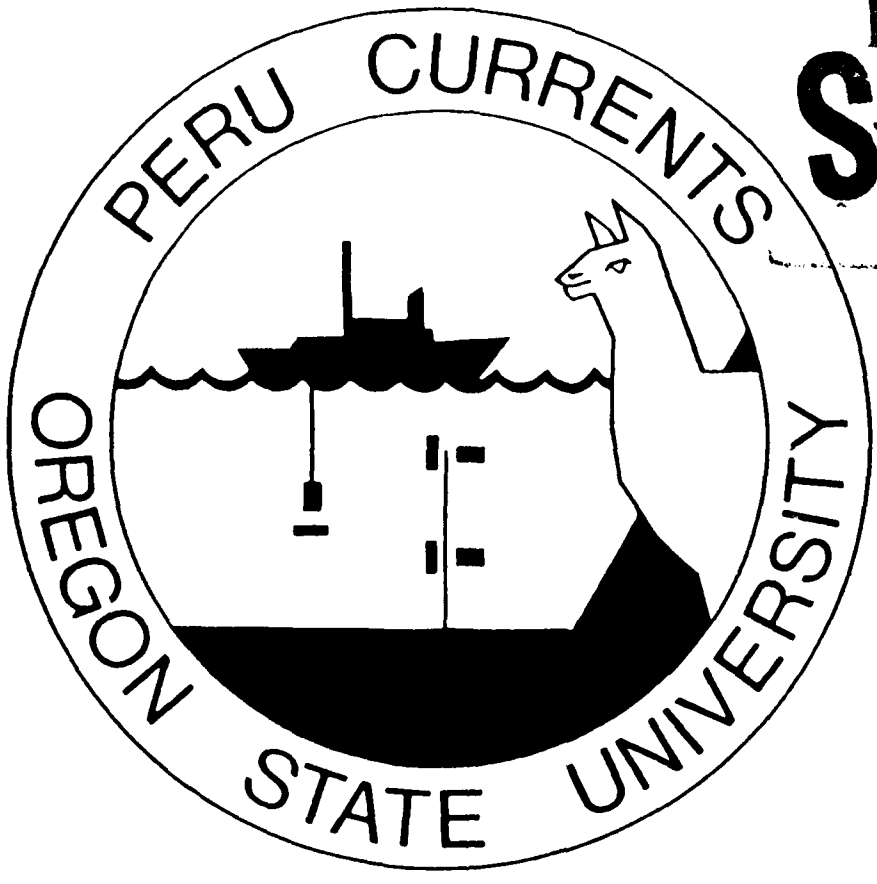

Vertical Sections of Temperature, Salinity and Sigma-Theta off Peru and Ecuador February 1983-April 1985

by
Jane Fleischbein
Adriana Huyer
Michaela Knoll
Robert L. Smith

Data Report 148
Reference 89-7
November 1989

National Science Foundation OCE-8017929, OCE-8110702, OCE-8315014, OCE-8709930

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As part of the Peru currents study, CTD observations were made between February 1983 and April 1985 between 3°N to 17°Soff the coasts of Peru and Ecuador. Vertical sections of temperature, salinity and sigma-theta vs depth from 0 to 625m are presented for each section completed during the eight cruises.

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Abstract

As part of the Peru Currents study, CTD observations were made between February 1983 and April 1985 between 3°N to 17°S off the coasts of Peru and Ecuador. Vertical sections of temperature, salinity and sigma-theta vs depth from 0 to 625 m are presented for each section completed during the eight cruises.

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INTRODUCTION

The Peru Currents project studied the variability in current, temperature, density and nutrient structure and the biological response to variability along the South Pacific's eastern equatorial boundary. Hydrographic observations were made during eight cruises aboard the R/V Wecoma and R/V Endeavor between February 1983 and April 1985 from 3°N to 17°S off the coasts of Peru and Ecuador (Figures 1-8). The CTD data profile plots and listings were presented in a previous report (Fleischbein, Huyer, Schramm and Smith, 1987). In this report we summarize the hydrographic data in vertical sections of temperature, salinity and sigma-theta from the CTD casts.

METHOD OF PREPARATION AND PRESENTATION

For each alongshore and cross-shore section, we show the vertical distribution of temperature, salinity and sigma-theta, contoured subjectively. The sections less than 500 km in length were prepared on a scale of 25 m and 10 km per cm; sections 500 to 1000 km long were made on a scale of 25 m and 30 km per cm; and sections 1000 to 1600 km in length were made on a scale of 25 m and 40 km per cm. The CTD data were plotted by computer along observed isogram depths and these depths were connected from station to station, smoothing by hand. The bottom of the CTD cast is shown by an inverted "T" whenever it is shallower than 625 m, the lower limit of the sections.

The bottom profiles were drawn by connecting the bottom depth observed at each station with a smooth curve. Tic marks at the top of each section indicate station positions at which a CTD cast was made. For the alongshore sections the stations are plotted with south on the left and north on the

right with the most northern station set at 0 km and each succeeding station plotted relative to the most northern station. The alongshore sections that cross the equator have the latitude of the most northern and southern stations noted and a line drawn at 0°00′ latitude. For cross-shore sections the stations are plotted by their distance from shore with the shore set at 0 km.

The sections are grouped by cruise, then by variable in consecutive order regardless of their location. The station locations for each cruise are listed in a table at the beginning of each cruise part (Tables 2-9). An index of the repeated sections is presented in Table 1.

Additional sections along some of these same lines were made by the NOAA EPOCS program. Hayes et al. (1987) used all the sections along 95°W made between mid-1980 and mid-1984 to describe the hydrographic variability west of the Galapagos Islands during the 1982-3 El Niño. Leetmaa et al. (1987) have similarly described the hydrographic conditions in the eastern tropical Pacific using all the sections along 85°W, 5°S and near 10°S.

ACKNOWLEDGEMENTS

Pat Collier assisted in drawing many of the temperature and sigma-theta sections. Ron Hill, Dave Reinhardt and William Gilbert helped draft the sections. Preparation of this report was supported by the National Science Foundation under Grant OCE-8709930.

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Hayes, S. P., L. J. Mangum, R. T. Barber, A. Huyer and R. L. Smith, 1987. Hydrographic Variability West of the Galapagos Islands during the 1982-83 El Niño. Progress in Oceanography, 17:137-162.

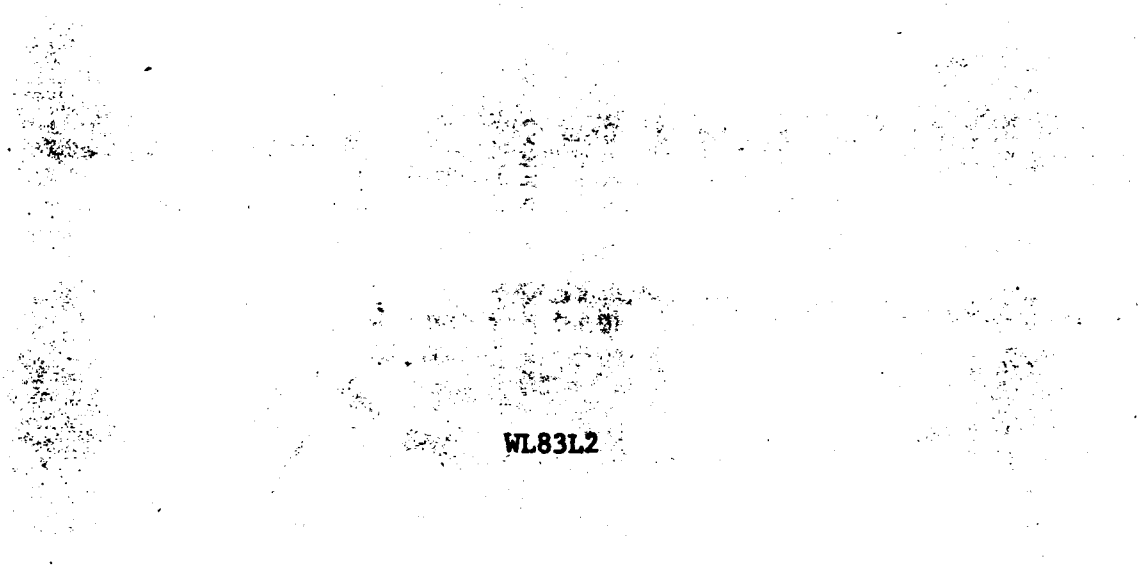
Leetmaa, A., D. W. Behringer, A. Huyer, R. L. Smith, and J. Toole, 1987. Hydrographic Conditions in the Eastern Pacific Before, During and After the 1982/83 El Niño. Progress in Oceanography, 19:1-47.

Table 1. Dates of occupation of repeated vertical sections with page numbers of the corresponding vertical sections.

Cruise	Date	Stations	Page no. of vertical section of: Temp	Sal.	Sigma-θ
A-Line (along 85°W)					
WL83L2	3-6 Feb 83	2-20	12	20	28
WL83L3	10-11 Mar 83	45-48	47	56	65
EN109	15-18 Nov 83	1-15	73	79	85
EN110	5-7 Dec 83	7-17	96	103	110
EN115	11-13 Apr 84	27-37	124	132	140
EN116	13-16 May 84	49-69	154	160	166
WL85L2	26-30 Mar 85	83-113	178	185	192
WL85L3	19-21 Apr 85	30-39	199	203	207
B-Line (along 5°S)					
WL83L2	7-9 Feb 83	25-31, 33-35, 37-38	13	21	29
WL83L3	7-14 Mar 83	33-39, 48-53	44	53	62
	Inshore part				
	7-8 Mar 83	33-39	45	54	63
EN109	19-20 Nov 83	16-27	74	80	86
EN110	14-18 Dec 83	37-50	99	106	113
	Inshore part				
	16-18 Dec 83	43-50	100	107	114
EN115	22-26 Apr 84	59-77	127	135	143
	Inshore part				
	25-26 Apr 84	64-77	128	136	144
EN116	9-11 May 84	29-37, 39-40	152	158	164
WL85L2	22-25 Mar 85	68-72, 74-80, 82	177	184	191
WL85L3	17-19 Apr 85	25-30	198	202	206
C-Line (Lobos de Afuera)					
WL83L2	12-13 Feb 83	43-51	14	22	30
WL83L3	4-5 Mar 83	12-17	42	51	60
EN109	22 Nov 83	29-35	75	81	87
EN116	7 May 84	17-24	150	156	162
WL85L2	19-20 Mar 85	45-54	175	182	189
D-Line (Chimbote)					
WL83L2	13-15 Feb 83	52-64	15	23	31
	15-17 Feb 83	64-76	16	24	32
WL83L3	2-3 Mar 83	1-11	41	50	59
EN109	24-25 Nov 83	37-39	76	82	88
	26-27 Nov 83	50-56	77	83	89
EN110	19 Dec 83	51-55	101	108	115

Table 1 (continued)

Cruise	Date	Stations	Page no. of vertical section of: Temp	Sal.	Sigma-θ
D-Line (Chimbote cont'd)					
EN115	8-9 Apr 84	11-21	122	130	138
EN116	4-6 May 84	2-7, 10-16	149	155	161
WL85L2	16-17 Mar 85	28-40	174	181	188
E-Line (Callao)					
WL83L2	18-19 Feb 83	82-92	18	26	34
EN109	27-28 Nov	57-66	78	84	90
EN115	6-8 Apr 84	1-10	121	129	137
WL85L2	10 Mar 85	1-6	172	179	186
	13-14 Mar 85	18-27	173	180	187
G-Line (along 95°W)					
WL83L3	14-16 Mar 83	53-62	48	57	66
EN110	12-14 Dec 83	28-37	98	105	112
EN115	18-22 Apr 84	50-59	126	134	142
WL85L3	15-17 Apr 85	16-25	197	201	205
I-Line (along 92°W)					
WL83L3	17-19 Mar 83	63-67, 70	49	58	67
EN110	9-11 Dec 83	19-22, 25-27	97	104	111
EN115	15-17 Apr 84	39-42, 45-49	125	133	141
WL85L3	12-14 Apr 85	5-8, 11-15	196	200	204
L-Line (along 81°30'W)					
WL83L3	4-6 Mar 83	12, 18-22	43	52	61
EN116	7-9 May 84	17, 25-28, 31	151	157	163
N-Line (San Juan)					
WL83L2	20-21 Feb 83	93-103	19	27	35
WL85L2	11-12 Mar 85	7-17	172	179	186
Along 10°30'S					
EN110	3-4 Dec 83	1-6	95	102	109
EN115	9-10 Apr 84	21-26	123	131	139



WL83L2

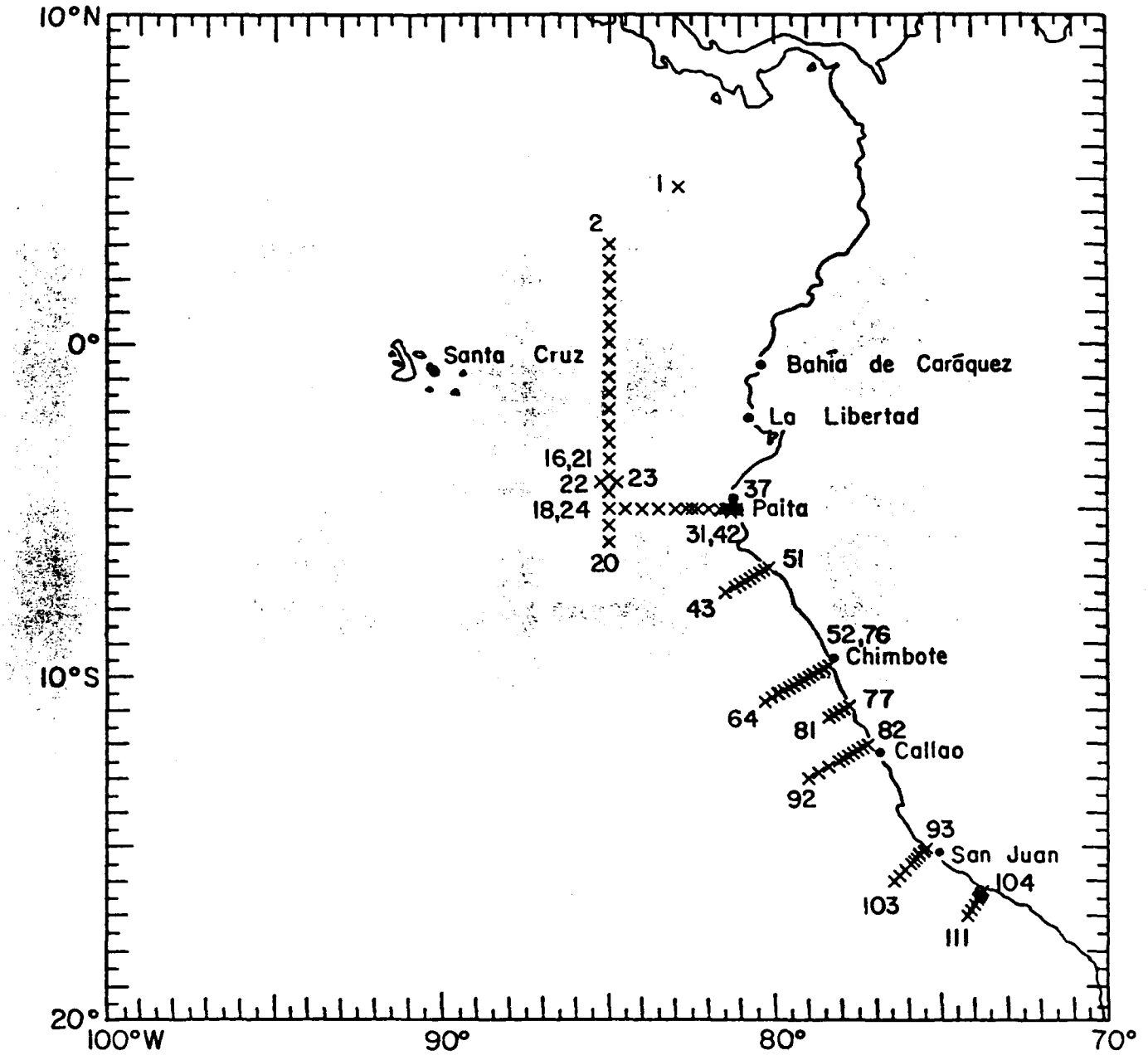


Figure 1. Location of CTD stations during WL83L2, 1-24 February 1983.

Table 2. List of stations occupied during WL83L2 showing date, time, location, wind speed and direction and atmospheric pressure.

Date		Time	Station No.	Name	Location Lat.	Long.	Wind Dir. (°T)	Wind Spd. (kts)	Pressure (mb)
Feb.	2	1801	1	TEST	4°44.6'N	82°55.0'W	60	8	1007.9
Feb.	3	1231	2	A-1	3°00.0'N	85°00.0'	80	7	1007.0
	3	1621	3	A-2	2°30.1'N	84°59.9'	70	9	1018.1
	3	2013	4	A-3	2°00.0'N	85°00.0'	70	8	1006.4
Feb.	4	0014	5	A-4	1°30.1'N	85°00.0'	65	6	1016.2
	4	0409	6	A-5	1°00.0'N	85°00.1'	50	8	1009.0
	4	0747	7	A-6	0°30.0'N	85°00.1'	40	6	1008.1
	4	1121	8	A-7	0°00.4'N	85°00.0'	40	5	1008.0
	4	1500	9	A-8	0°30.0'S	85°00.1'	50	4	1010.9
	4	1931	10	A-9	1°01.8'S	85°00.8'	AIRS	--	1009.1
	4	2247	11	A-10	1°29.9'S	85°00.0'	AIRS	--	1008.0
Feb.	5	0224	12	A-11	2°00.0'S	85°00.0'	AIRS	--	1010.3
	5	0624	13	A-12	2°30.0'S	85°00.0'	270	7	1010.8
	5	0942	14	A-13	2°59.9'S	84°59.7'	280	10	1008.8
	5	1325	15	A-14	3°30.0'S	85°00.0'	AIRS	--	1011.3
	5	1709	16	A-15	4°00.0'S	85°00.0'	60	10	1012.5
	5	2044	17	A-16	4°29.9'S	85°00.0'	AIRS	--	1009.5
Feb.	6	0024	18	A-17	4°59.9'S	84°59.1'	70	10	1009.0
	6	0410	19	A-18	5°30.0'S	85°00.0'	30	10	1011.0
	6	0807	20	A-19	6°00.0'S	84°59.9'	50	8	1009.2
Feb.	7	0037	21	A-15	4°00.0'S	85°00.0'	AIRS	--	1010.9
	7	0325	22	AW	4°11.9'S	85°15.0'	295	6	1012.1
	7	0713	23	AE	4°11.9'S	84°45.0'	270	6	1011.5
	7	1019	24	A-16	4°29.9'S	85°00.0'	270	6	1010.2
	7	1512	25	B-1	5°00.5'S	84°30.0'	215	5	1012.8
	7	1845	26	B-2	5°00.0'S	84°00.1'	150	6	1012.1
	7	2211	27	B-3	5°00.0'S	83°30.0'	210	4	1009.5
Feb.	8	0117	28	B-4	5°00.0'S	83°00.0'	AIRS	--	1011.1
	8	0426	29	B-5	4°59.9'S	82°40.0'	70	6	1012.9
	8	0706	30	B-6	5°00.1'S	82°20.0'	320	6	1011.1
	8	0947	31	B-7	5°00.0'S	82°00.0'	AIRS	--	1011.0
	8	1856	32	B-5.5	4°59.9'S	82°30.1'	--	0	1011.3
Feb.	9	0019	33	B-8	5°02.5'S	81°38.1'	230	7	1010.0
	9	0155	34	B-9	5°00.0'S	81°30.0'	AIRS	--	1010.9
	9	0347	35	B-10	4°58.1'S	81°25.7'	AIRS	--	1011.5
	9	1213	36	FSMS	5°06.3'S	81°20.4'	20	12	1011.0
	9	1732	37	B-12	5°00.0'S	81°10.0'	270	5	1009.0
	9	1824	38	B-11	5°00.0'S	81°15.0'	--	--	1007.5
	9	1921	39	B-10	5°00.0'S	81°20.0'	200	12	1007.9
	9	2036	40	B-9	5°00.0'S	81°30.0'	200	14	1007.1
	9	2232	41	B-8	5°00.4'S	81°40.5'	200	10	1006.5
Feb.	10	0126	42	B-7	5°00.0'S	82°00.0'	200	12	1007.1
Feb.	12	0819	43	C-9	7°29.9'S	81°30.0'	150	16	1008.5
	12	1102	44	C-8	7°19.9'S	81°13.1'	150	16	1009.0
	12	1317	45	C-7	7°15.0'S	81°04.0'	140	14	1010.1
	12	1517	46	C-6	7°10.0'S	80°55.0'	150	14	1010.1
	12	1727	47	C-5	7°05.0'S	80°46.0'	160	13	1010.0
	12	1818	48	C-4	7°00.0'S	80°38.0'	170	12	1009.0

Table 2 cont'd.

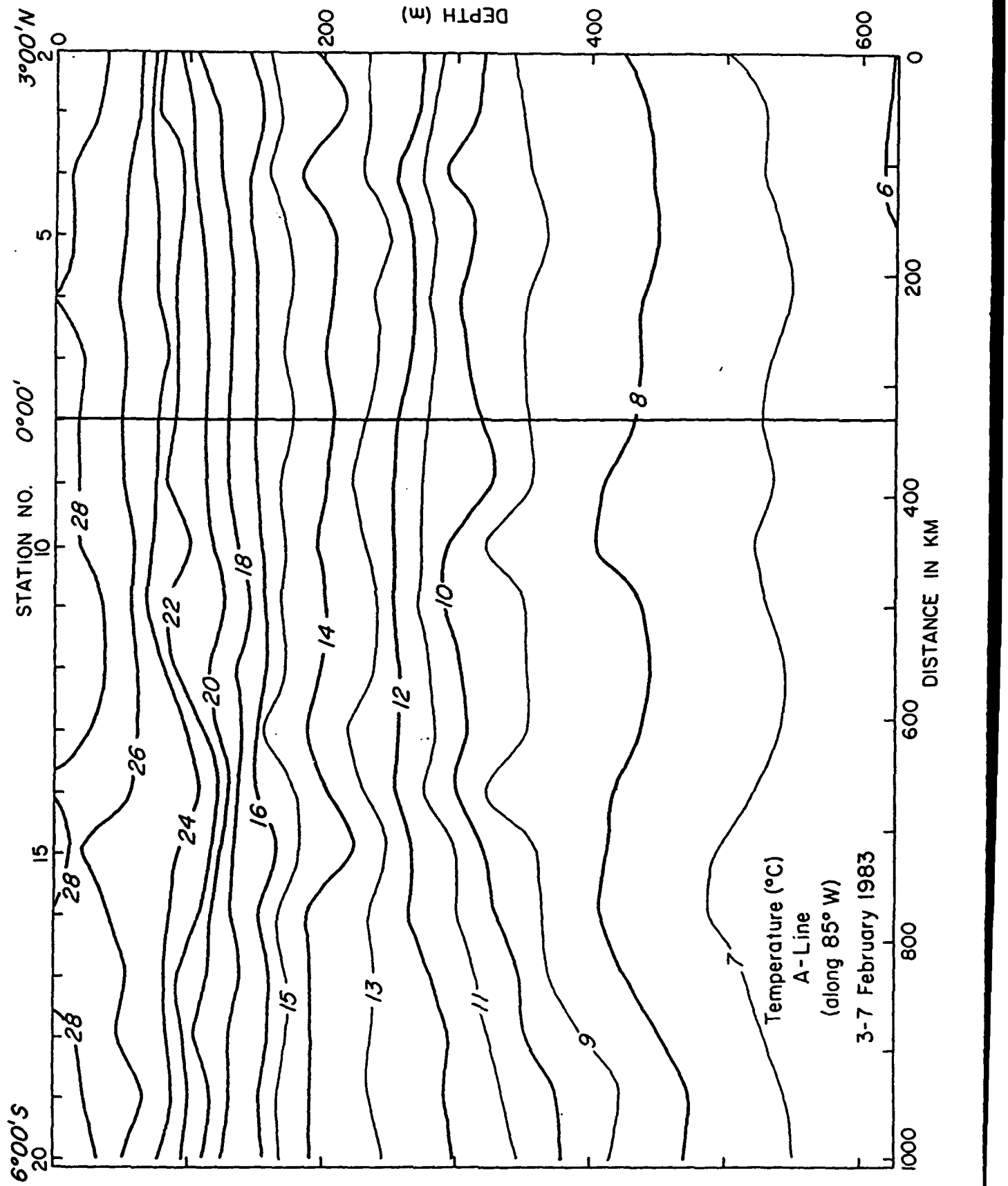
1983

Date		Time	Station No.	Name	Location Lat.	Long.	Wind Dir. (°T)	Spd. (kts)	Pressure (mb)
Feb.	12	2050	49	C-3	6°55.0'S	80°29.0'W	150	12	1008.0
	12	2211	50	C-2	6°49.9'S	80°20.2'	205	15	1008.0
Feb.	13	0008	51	C-1	6°45.6'S	80°11.4'	175	13	1008.5
	13	1928	52	D-1	9°40.0'S	78°24.0'	190	12	1010.0
	13	2135	53	D-2	9°45.0'S	78°33.0'	170	10	1009.0
Feb.	14	0012	54	D-3	9°50.0'S	78°42.0'	180	12	1010.0
	14	0201	55	D-4	9°54.9'S	78°52.7'	170	14	1010.6
	14	0349	56	D-5	10°00.0'S	79°00.0'	150	15	1011.6
	14	0527	57	D-6	10°05.0'S	79°08.9'	140	13	1011.0
	14	0717	58	D-7	10°10.0'S	79°17.9'	150	12	1009.7
	14	1910	59	D-7	10°10.0'S	79°17.9'	130	12	1009.9
	14	2102	60	D-8	10°15.0'S	79°27.0'	150	12	1008.5
	14	2252	61	D-9	10°20.0'S	79°36.0'	150	14	1008.2
Feb.	15	0052	62	D-10	10°25.0'S	79°45.0'	150	14	1010.0
	15	0256	63	D-11	10°30.2'S	79°57.3'	150	16	1010.1
	15	0632	64	D-12	10°45.0'W	80°20.0'	150	14	1009.1
Feb.	16	0231	65	D-11A	10°37.5'S	80°06.9'	140	18	1008.9
	16	2109	66	D-11	10°30.0'S	79°54.0'	160	16	1007.0
	16	2346	67	D-10	10°25.0'S	79°45.0'	150	16	1007.5
Feb.	17	0125	68	D-9	10°20.0'S	79°36.0'	150	19	1008.1
	17	0310	69	D-8	10°15.0'S	79°27.0'	155	14	1009.0
	17	0513	70	D-7	10°10.0'S	79°18.0'	150	14	1009.0
	17	0700	71	D-6	10°05.0'S	79°09.0'	150	14	1008.5
	17	0902	72	D-5	9°59.6'S	78°59.6'	150	15	1008.0
	17	1052	73	D-4	9°55.5'S	78°51.0'	150	15	1007.2
	17	1240	74	D-3	9°50.0'S	78°42.0'	150	14	1008.8
	17	1409	75	D-2	9°45.0'S	78°33.0'	160	16	1008.9
	17	1528	76	D-1	9°40.0'S	78°24.0'	170	12	1009.1
	17	2323	77	PS-1	10°52.0'S	77°43.0'	170	10	1007.3
Feb.	18	0102	78	PS-2	10°57.0'S	77°57.0'	170	11	1008.2
	18	0232	79	PS-3	11°02.0'S	78°06.0'	160	15	1009.1
	18	0430	80	PS-4	11°07.0'S	78°15.0'	160	16	1009.9
	18	0559	81	PS-5	11°12.0'S	78°23.5'	150	13	1009.7
	18	1557	82	E-1	12°00.0'S	77°14.0'	140	8	1008.9
	18	1714	83	E-2	12°04.9'S	77°23.0'	170	10	1008.1
	18	1844	84	E-3	12°10.0'S	77°31.9'	170	14	1007.7
	18	2011	85	E-4	12°15.0'S	77°40.0'	170	14	1007.0
	18	2126	86	E-4	12°15.0'S	77°40.0'	170	15	1007.0
	18	2326	87	E-5	12°20.0'S	77°48.9'	170	13	1007.5
Feb.	19	0139	88	E-6	12°25.0'S	77°58.0'	160	15	1009.0
	19	0323	89	E-7	12°30.0'S	78°06.0'	160	15	1009.8
	19	0623	90	E-8	12°39.9'S	78°24.0'	160	14	1009.1
	19	0919	91	E-9	12°50.0'S	78°42.0'	150	12	1008.0
	19	1231	92	E-10	13°00.0'S	79°00.0'	150	12	1009.0
Feb.	20	1308	93	N-1	15°02.5'S	75°26.0'	160	14	1009.0
	20	1405	94	N-2	15°06.0'S	75°30.0'	160	18	1009.0
	20	1453	95	N-3	15°08.5'S	75°32.5'	160	15	1008.7

Table 2 cont'd.

1983

Date		Time	Station No.	Name	Location Lat.	Long.	Wind Dir. (°T)	Spd. (kts)	Pressure (mb)
Feb.	20	1543	96	N-4	15°11.0'S	75°40.0'W	160	16	1008.6
	20	1707	97	N-5	15°15.0'S	75°39.9'	150	17	1007.9
	20	1911	98	N-6	15°20.0'S	75°45.0	150	16	1006.9
	20	2122	99	N-7	15°25.0'S	75°50.0'	150	14	1006.5
	20	2333	100	N-8	15°30.0'S	75°55.0'	150	15	1007.0
Feb.	21	0202	101	N-10	15°40.0'S	76°05.0'	150	17	1007.4
	21	0413	102	N-11	15°50.1'S	76°15.0'	150	20	1008.3
	21	0630	103	N-12	15°59.9'S	76°24.9'	150	15	1008.0
	21	2138	104	PA-1	16°15.0'S	73°42.5'	AIRS	--	1006.0
	21	2231	105	PA-2	16°19.1'S	73°45.2'	AIRS	--	1006.2
	21	2352	106	PA-3	16°22.9'S	73°47.4'	160	10	1007.5
Feb.	22	0109	107	PA-4	16°27.0'S	73°50.0'	160	11	1008.1
	22	0233	108	PA-5	16°31.0'S	73°52.5'	140	11	1008.1
	22	0418	109	PA-7	16°40.0'S	73°57.5'	150	15	1008.0
	22	0623	110	PA-8	16°49.9'S	74°04.0'	140	14	1007.5
	22	0840	111	PA-9	16°59.9'S	74°10.0'	150	15	1006.5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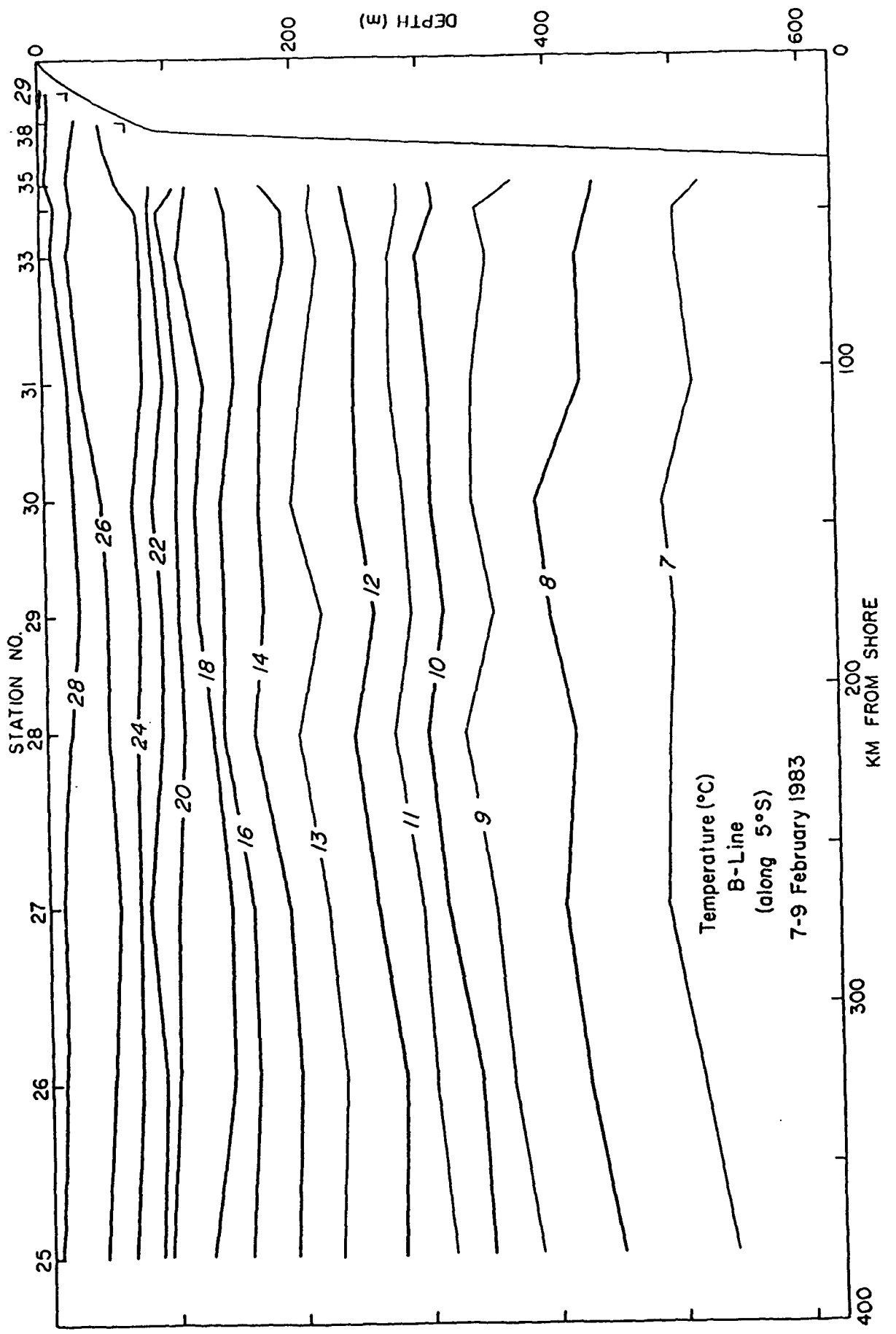
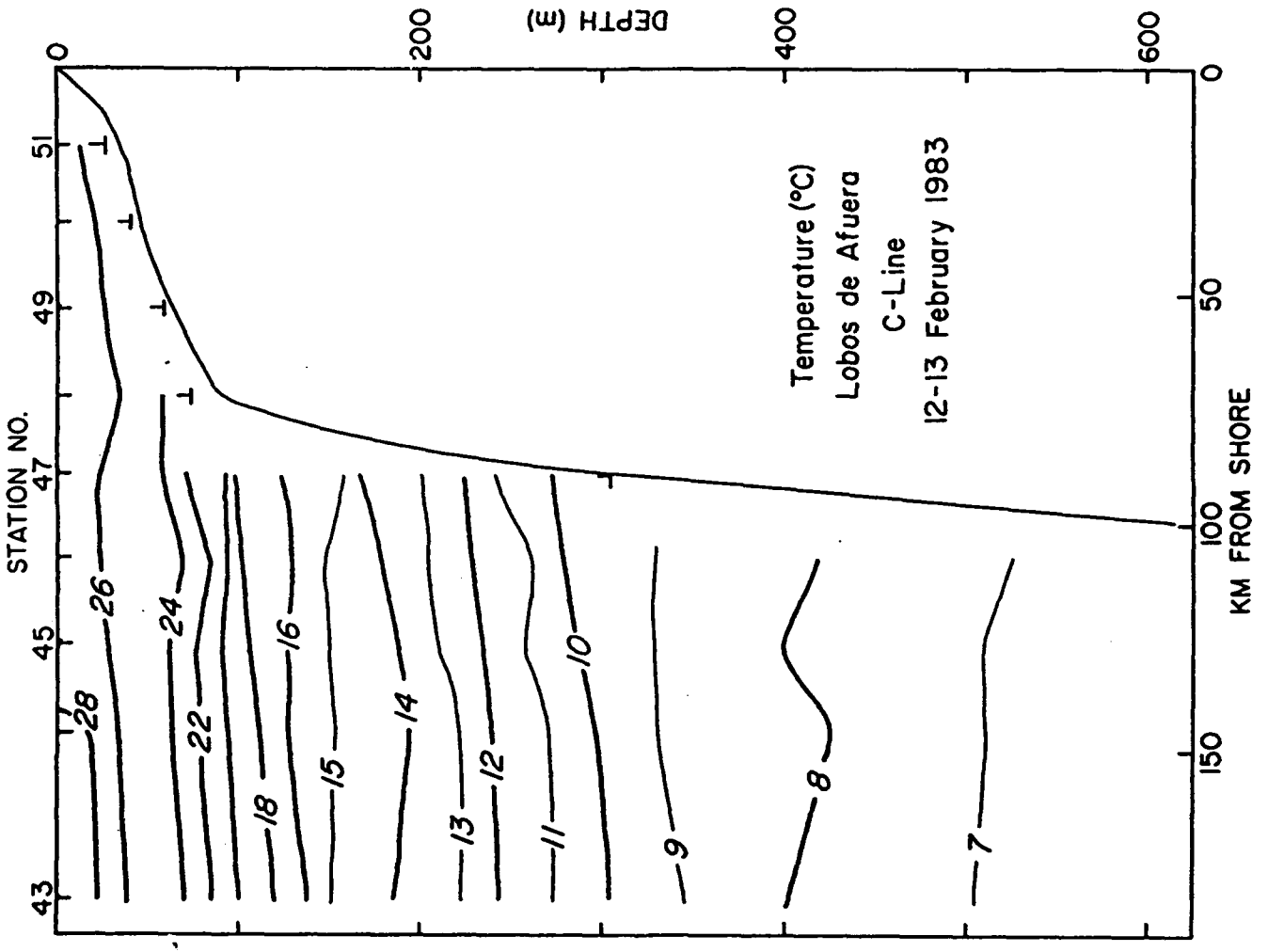
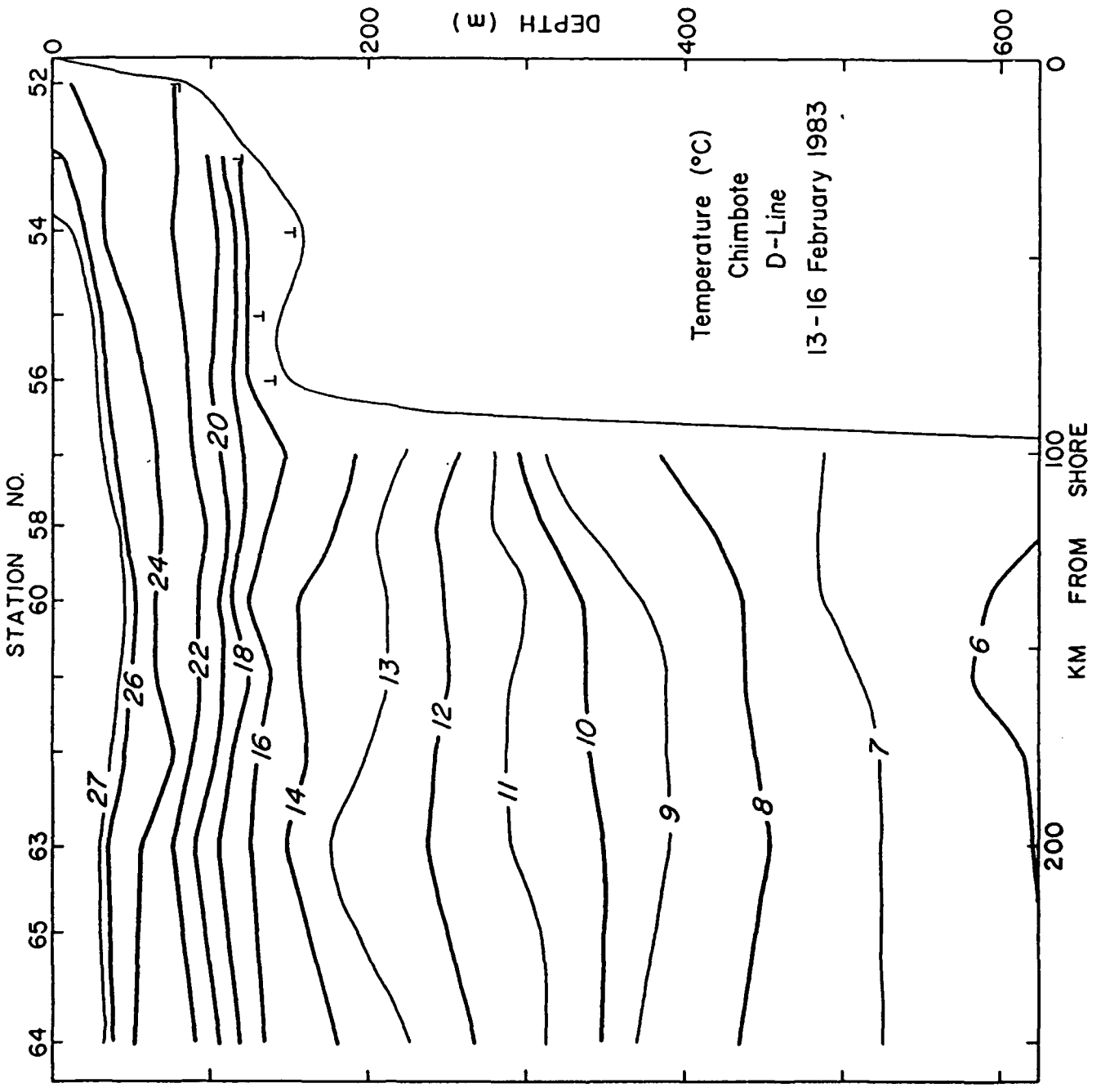
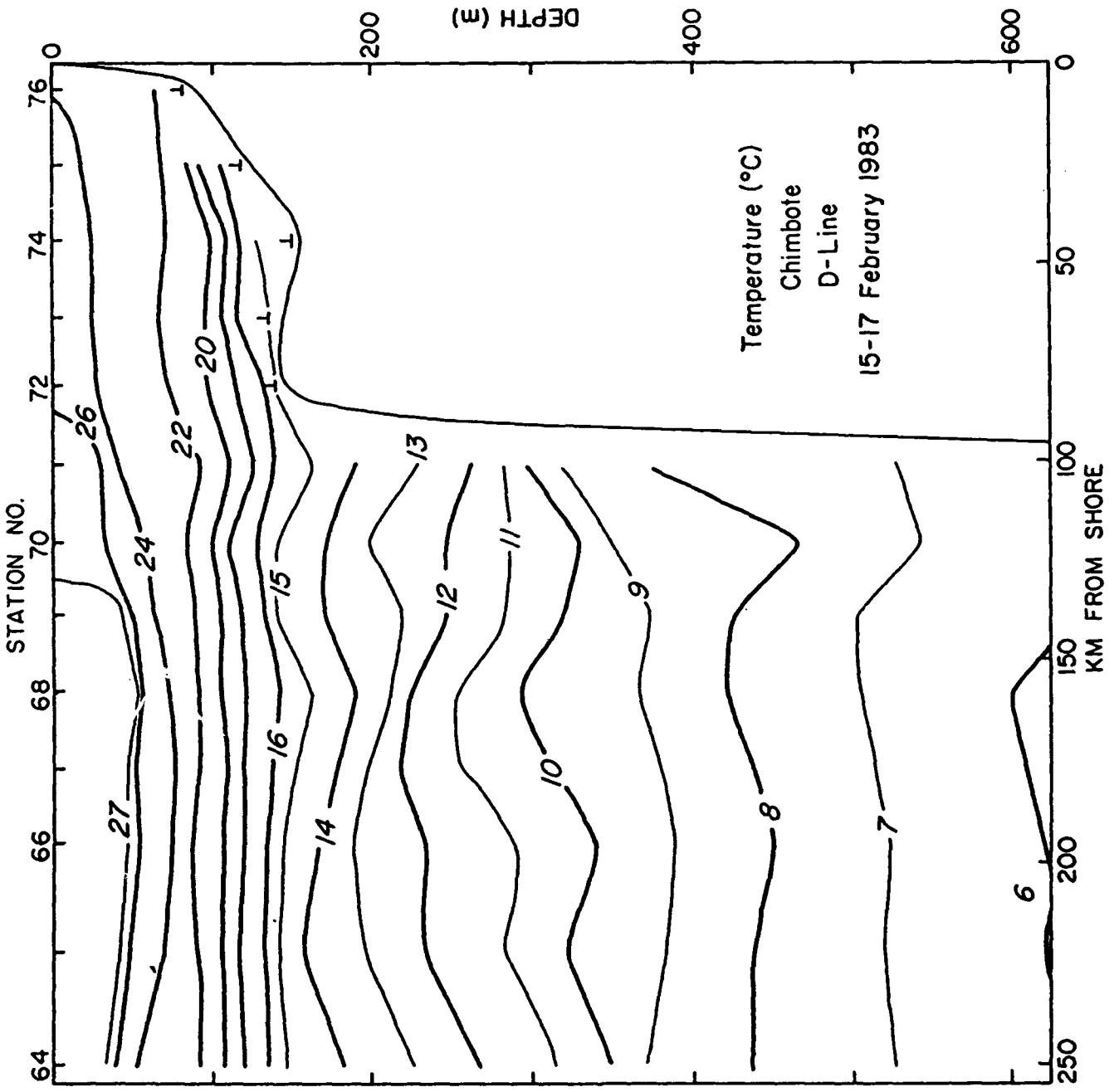
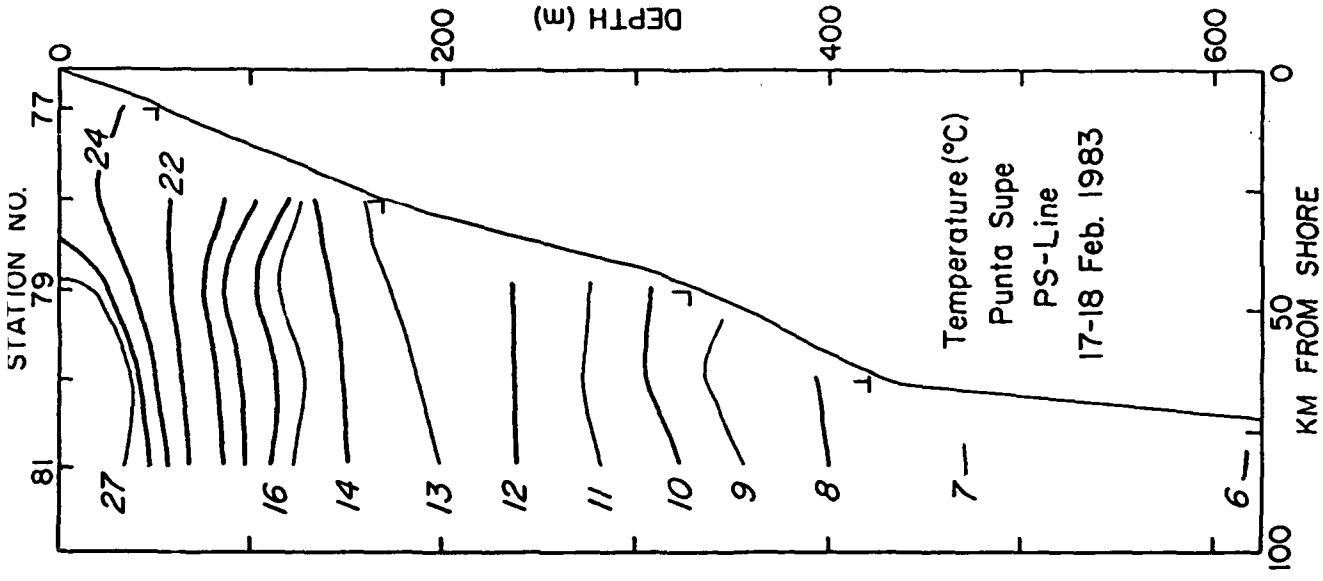
15
14
13
12
11
10
9
8
7
6
Temperature (°C)
A-Line
(along 85° W)
3-7 February 1983

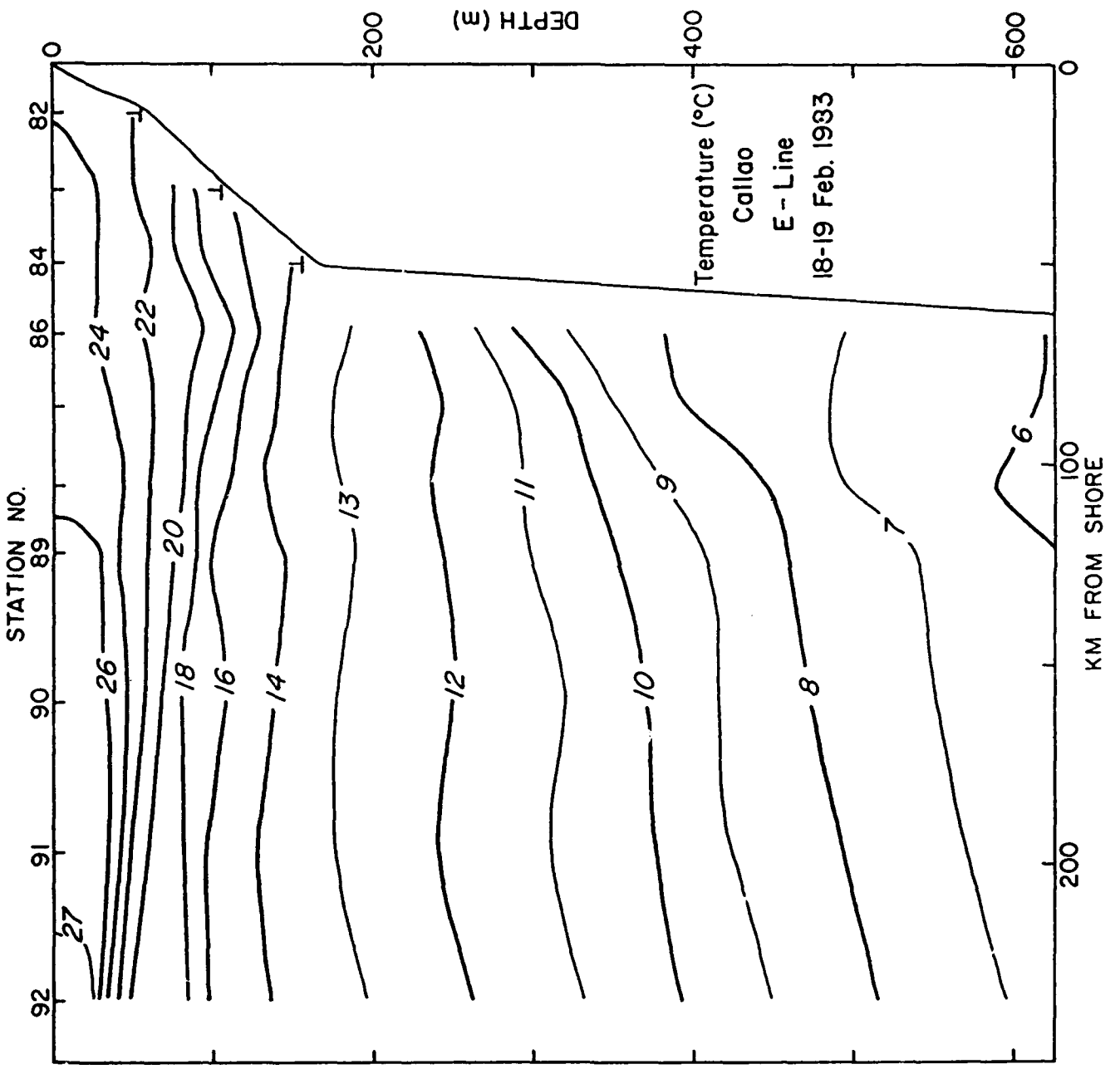

DEPTH (m)
0
200
400
600
STATION NO.
29
38
35
33
31
30
29
28
27
26
25
1
1
28
26
24
22
20
18
16
14
13
12
11
10
9
8
7
0
100
200
300
400
KM FROM SHORE
Temperature (°C)
B-Line
(along 5°S)
7-9 February 1983

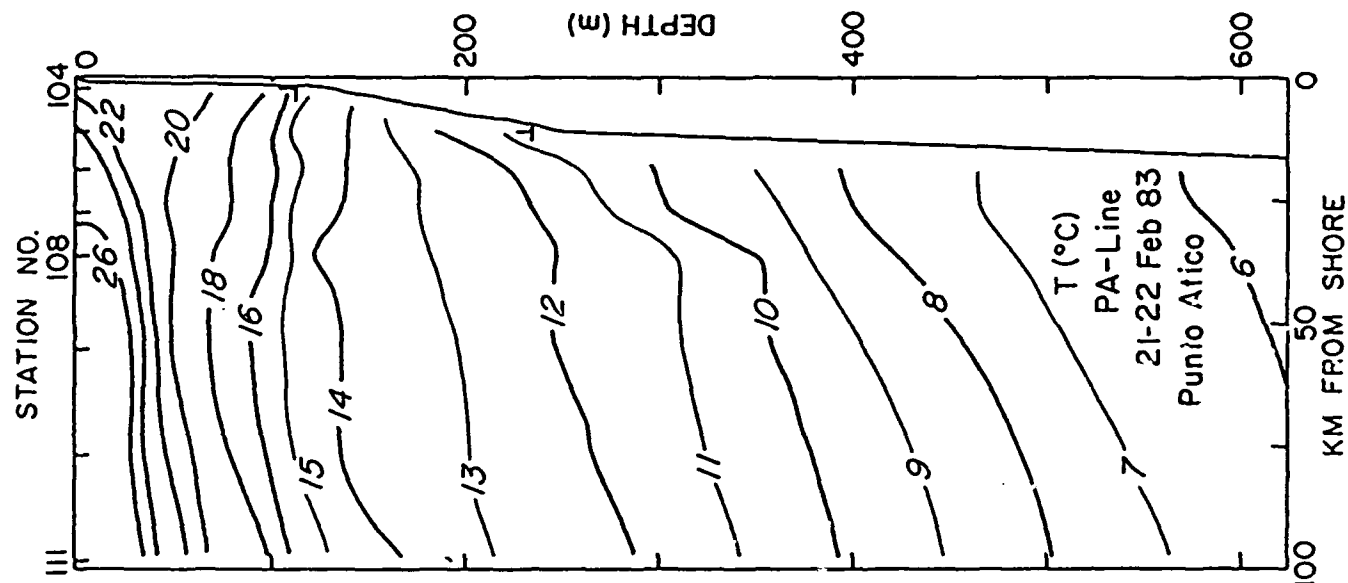

DEPTH (m)
0
200
400
600
STATION NO.
51
49
47
45
43
0
50
100
150
KM FROM SHORE
Temperature (°C)
Lobos de Afuera
C-Line
12-13 February 1983
28
26
24
22
18
16
15
14
13
12
11
10
9
8
7

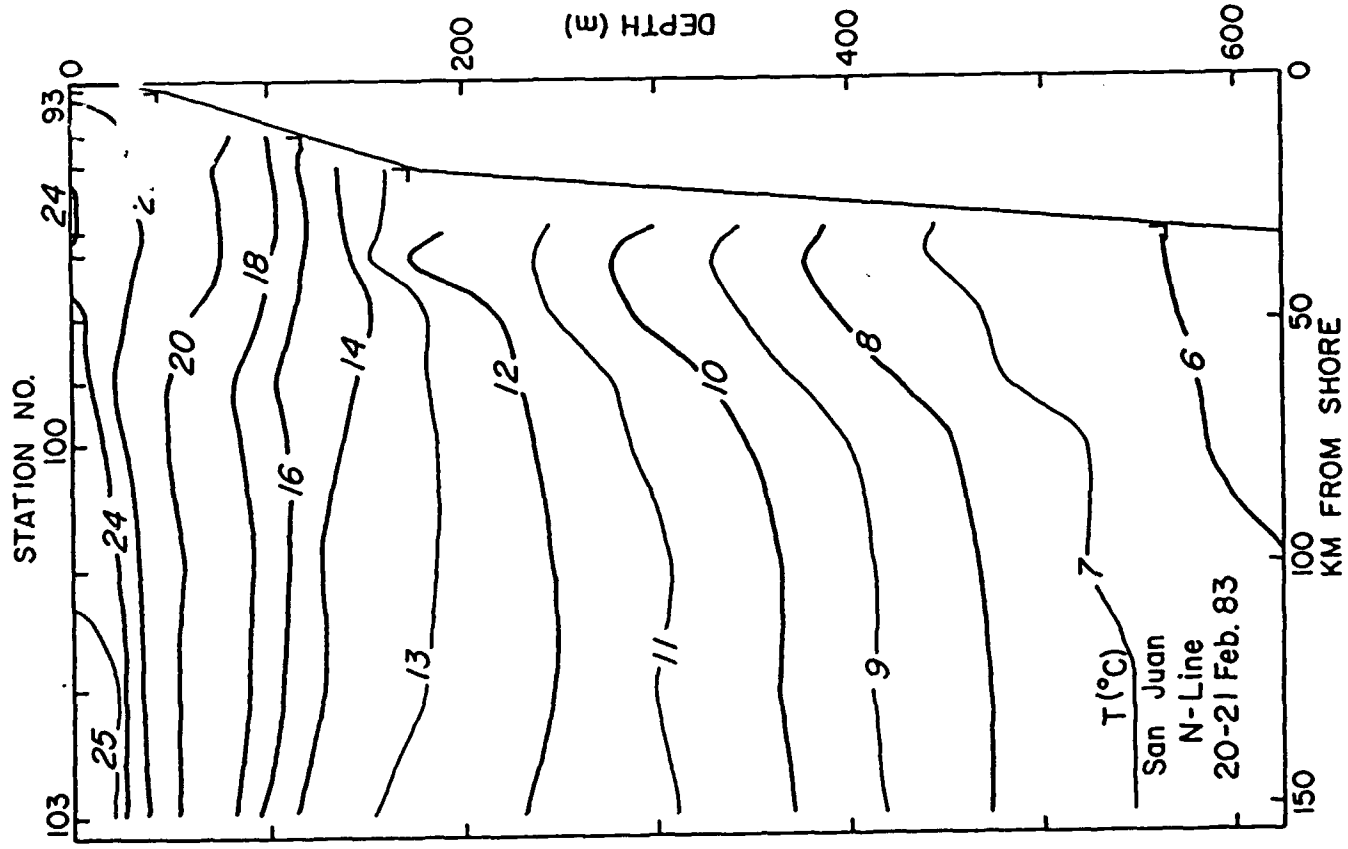

Temperature (°C)
Chimbote
D-Line
13-16 February 1983
DEPTH (m)
0
200
400
600
STATION NO.
52
54
56
58
60
63
65
64
KM FROM SHORE
0
100
200
27
26
24
22
20
18
16
14
13
12
11
10
9
8
7
6

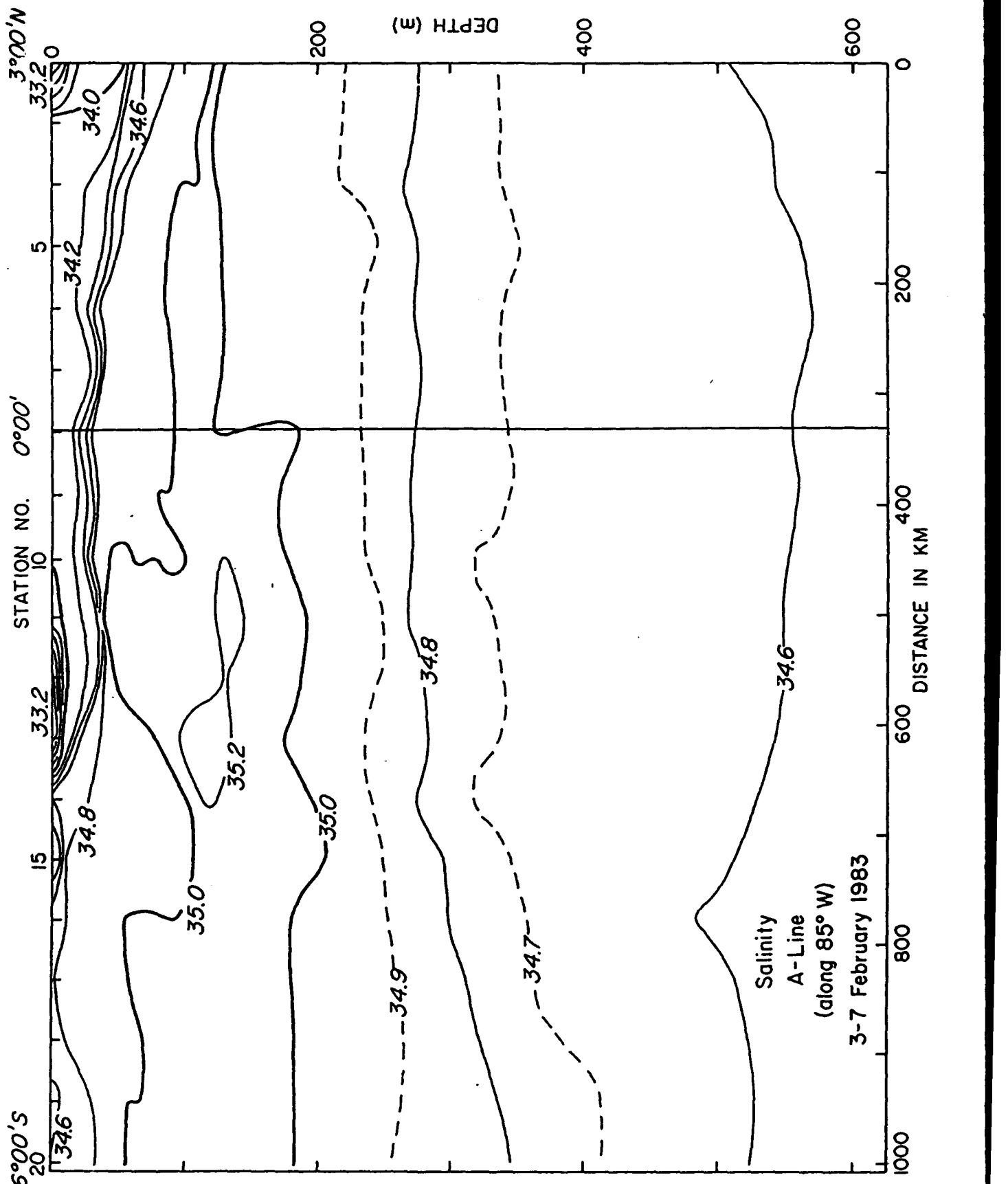

DEPTH (m)
0
200
400
600
STATION NO.
76
74
72
70
68
66
64
KM FROM SHORE
0
50
100
150
200
250
Temperature (°C)
Chimbote
D-Line
15-17 February 1983
26
24
22
20
16
15
14
13
12
11
10
9
8
7
6
27

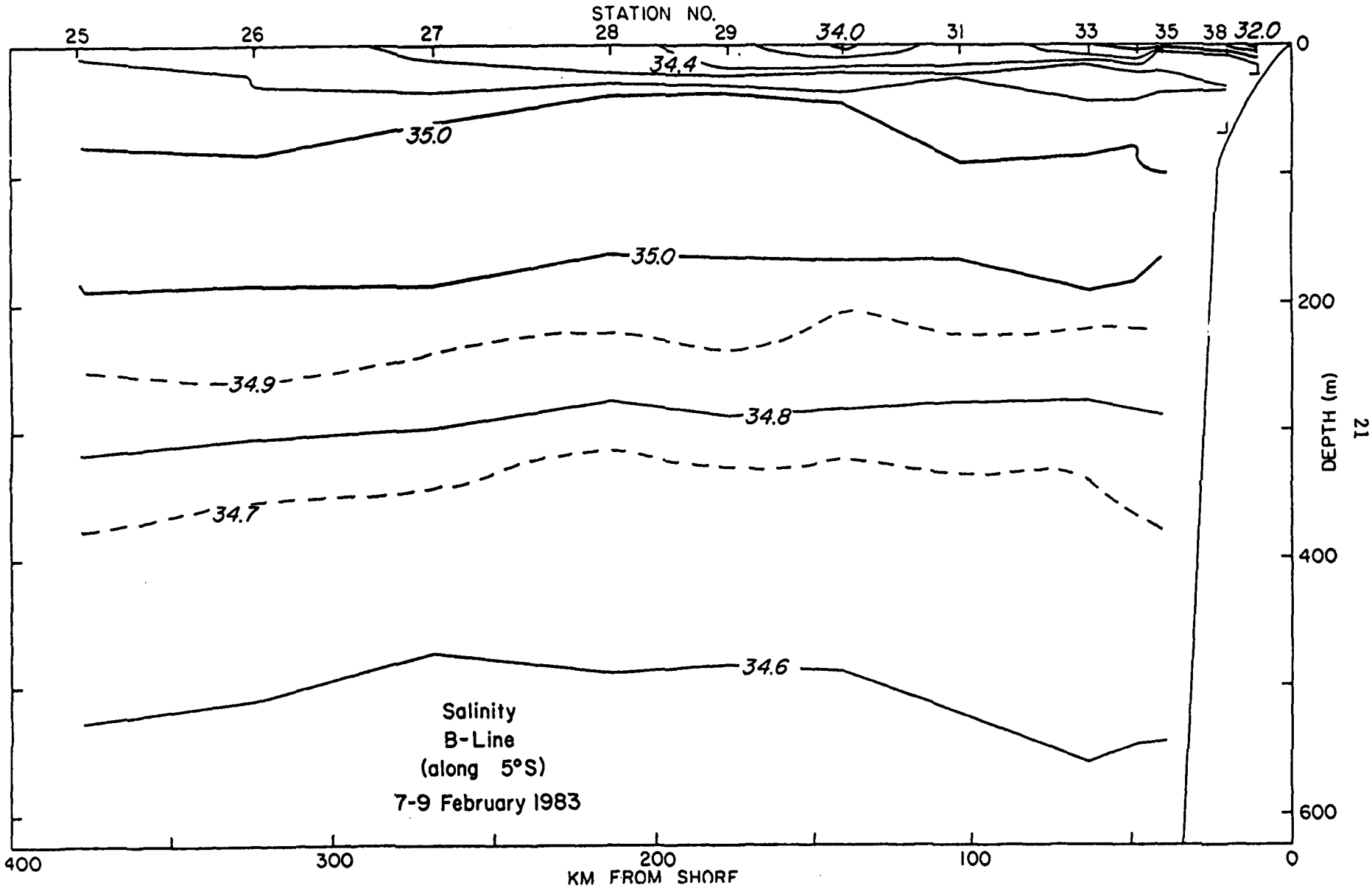

STATION NO.
77
79
81
DEPTH (m)
0
200
400
600
0
50
100
KM FROM SHORE
Temperature (°C)
Punta Supe
PS-Line
17-18 Feb. 1983
27
24
22
16
14
13
12
11
10
9
8
7
6

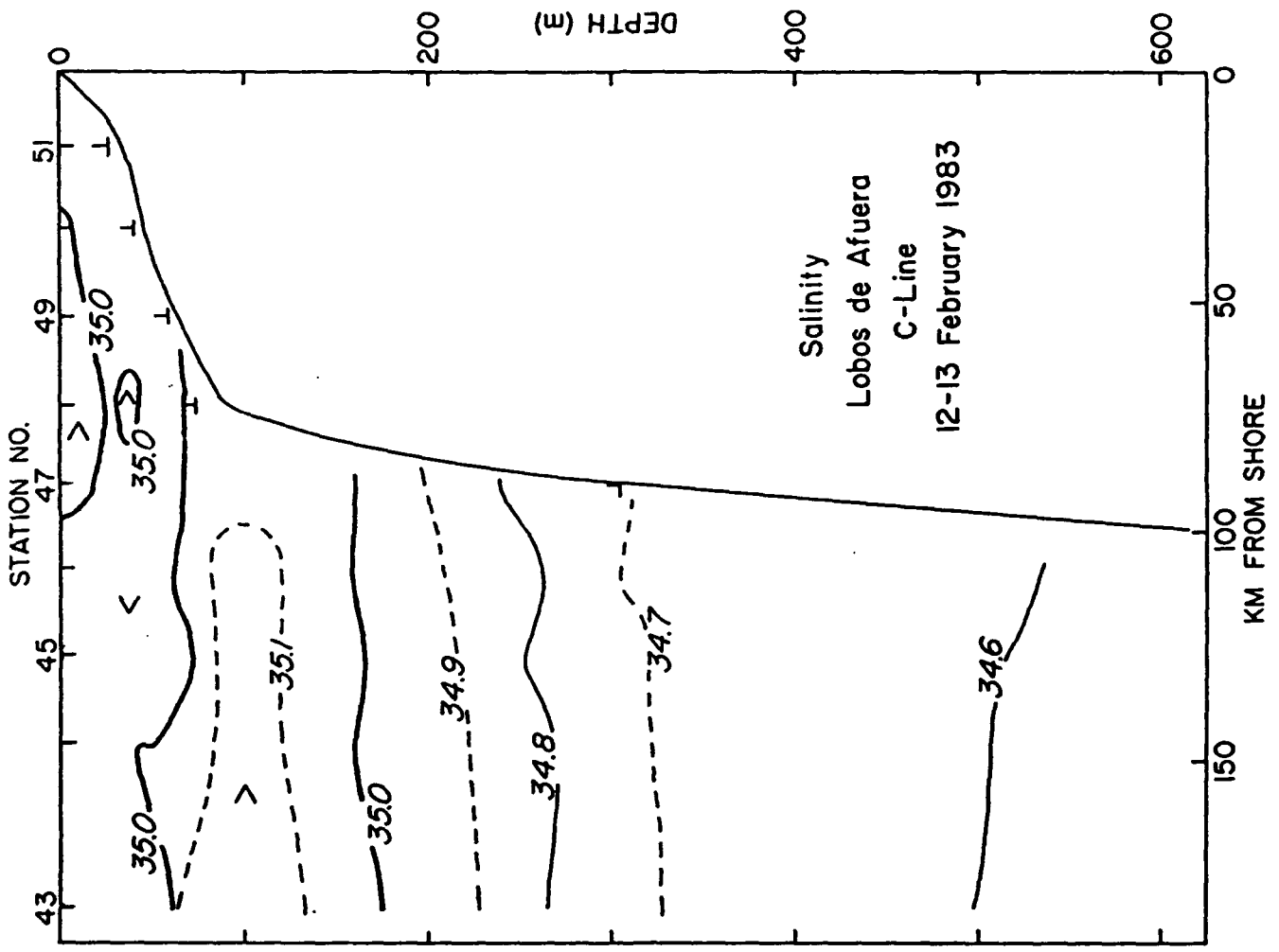

Temperature (°C)
Callao
E - Line
18-19 Feb. 1933
DEPTH (m)
0
200
400
600
STATION NO.
82
84
86
89
90
91
92
KM FROM SHORE
0
100
200
27
26
24
22
20
18
16
14
13
12
11
10
9
8
7
6

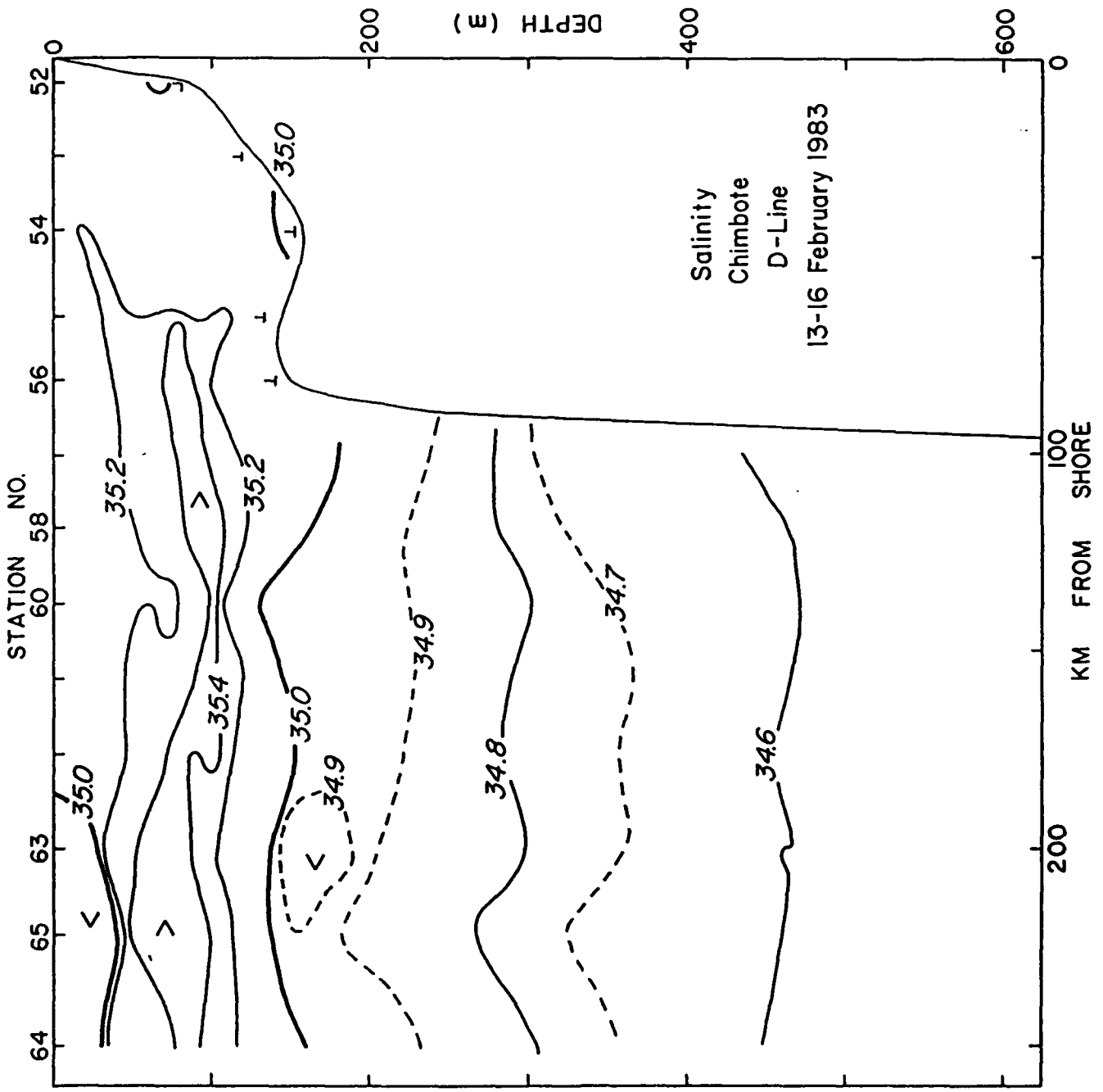

DEPTH (m)
0
200
400
600
STATION NO.
104
108
111
22
20
26
18
16
15
14
13
12
11
10
9
8
7
6
T (°C)
PA-Line
21-22 Feb 83
Punio Atico
0
50
100
KM FROM SHORE

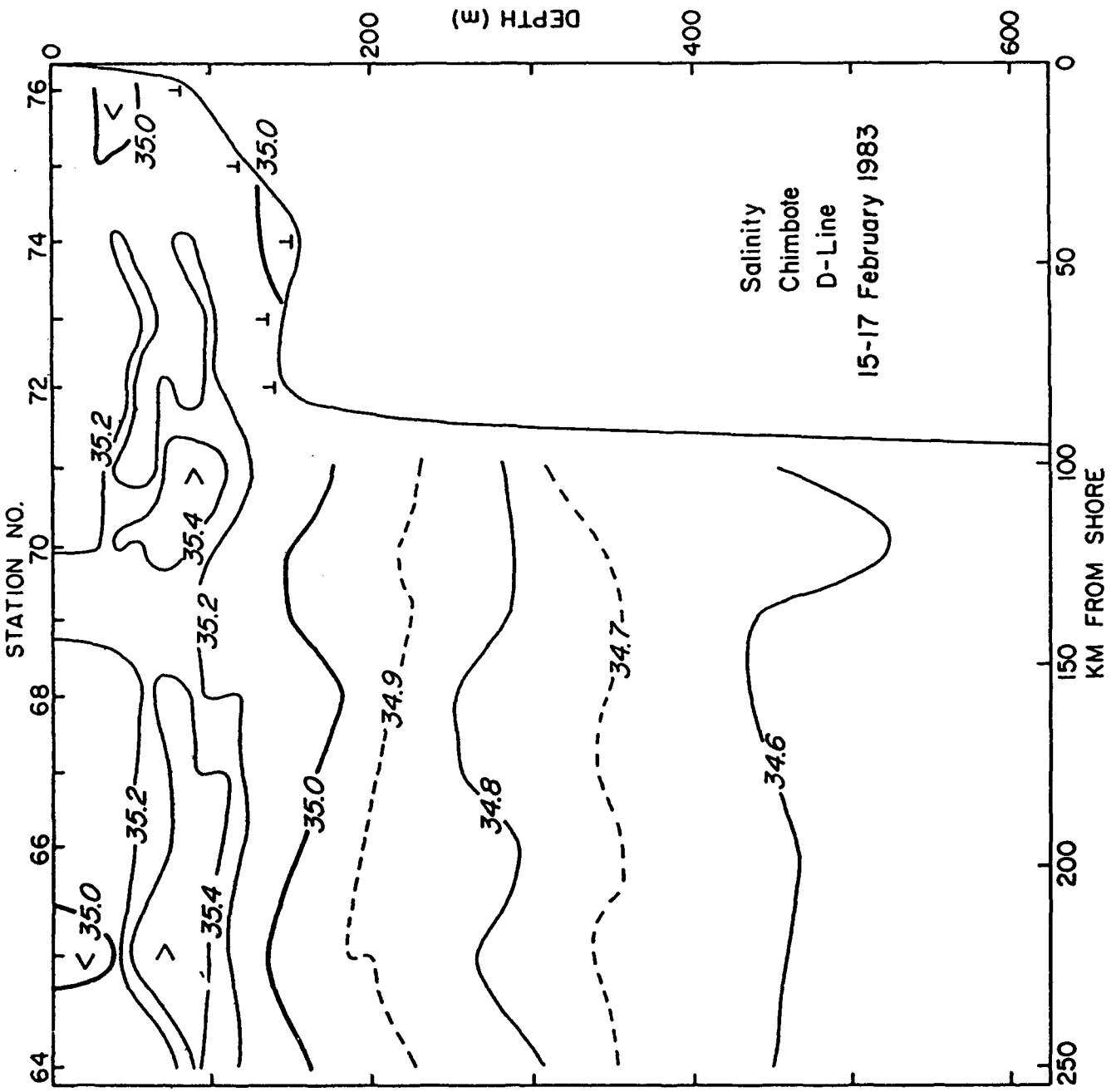

DEPTH (m)
0
200
400
600
STATION NO.
93
100
103
24
25
20
18
16
14
13
12
11
10
9
8
7
6
T (°C)
San Juan
N-Line
20-21 Feb. 83
0
50
100
150
KM FROM SHORE

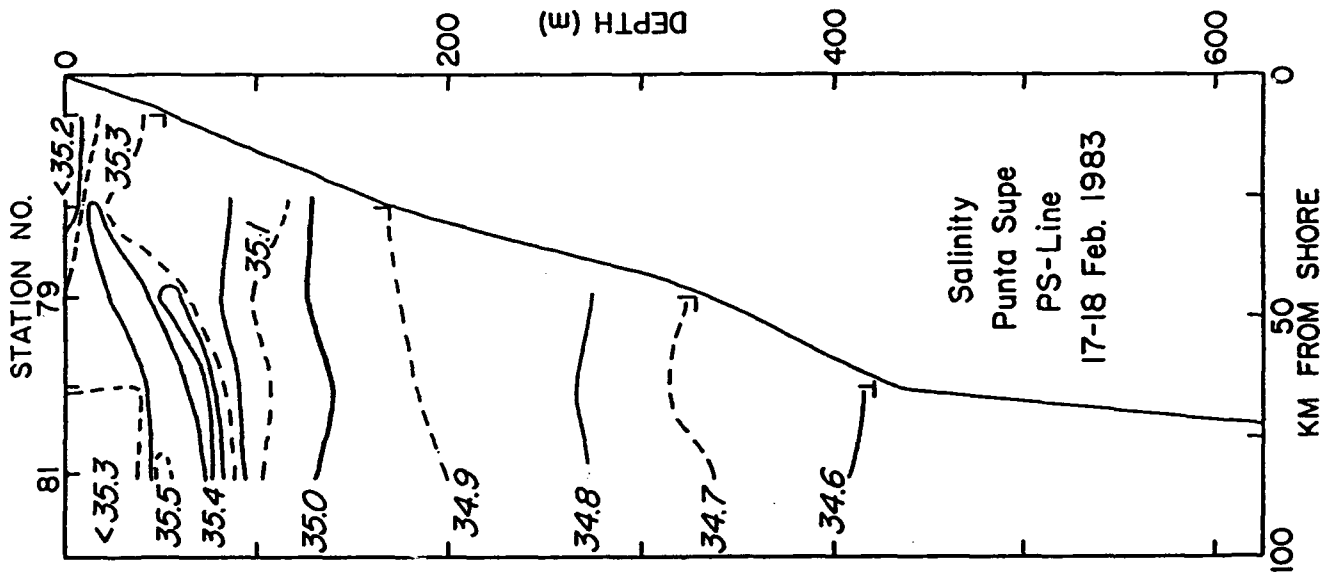

3°00'N
0°00'
6°00'S
STATION NO.
0
5
10
15
20
DEPTH (m)
0
200
400
600
800
1000
DISTANCE IN KM
0
200
400
600
33.2
34.0
34.6
34.2
34.8
35.0
35.2
34.9
34.7
Salinity
A-Line
(along 85° W)
3-7 February 1983

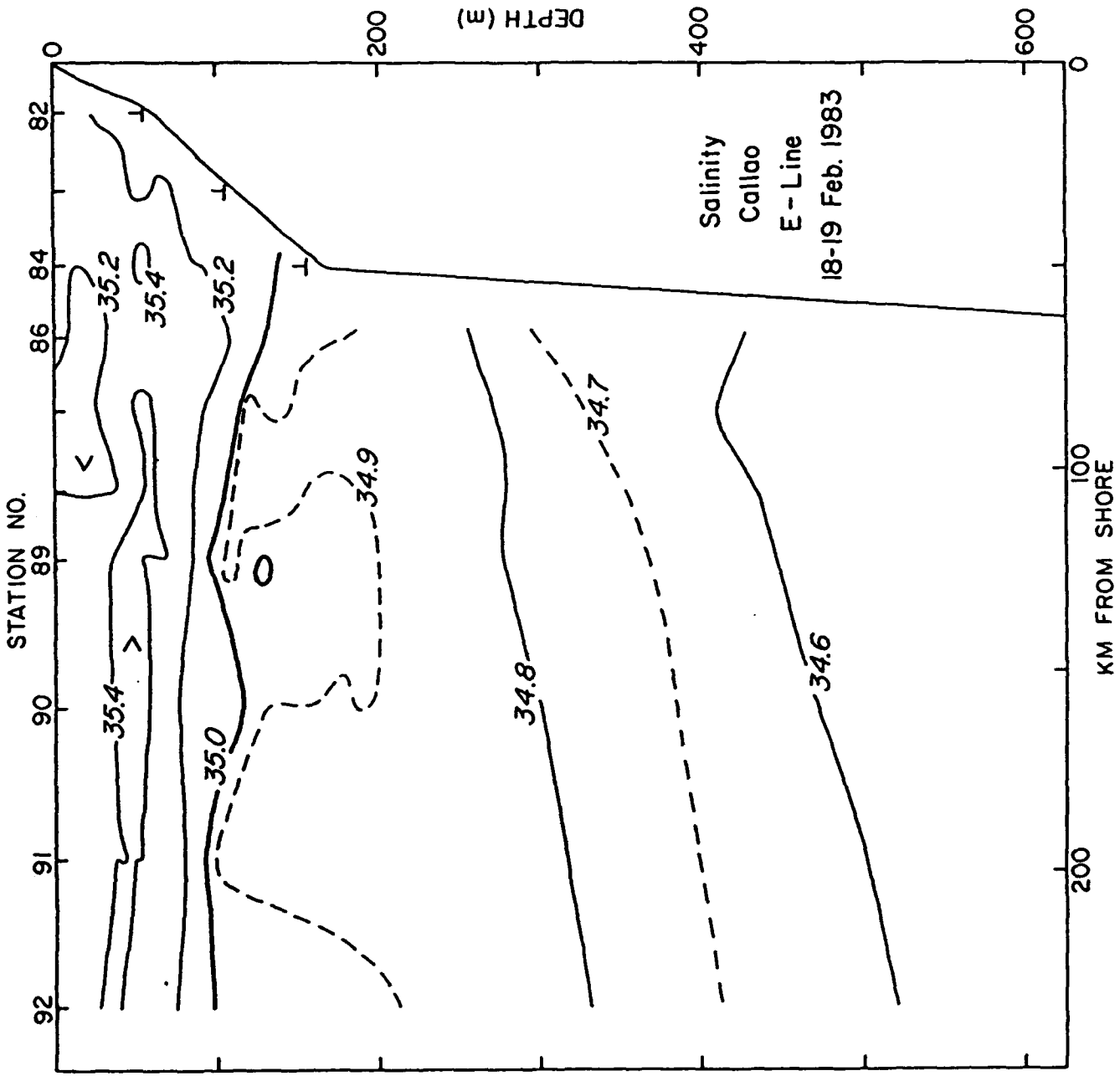

STATION NO.
25
26
27
28
29
34.0
31
33
35
38
32.0
34.4
35.0
35.0
34.9
34.8
34.7
34.6
Salinity
B-Line
(along 5°S)
7-9 February 1983
400
300
200
100
0
KM FROM SHORE
0
200
400
600
DEPTH (m)

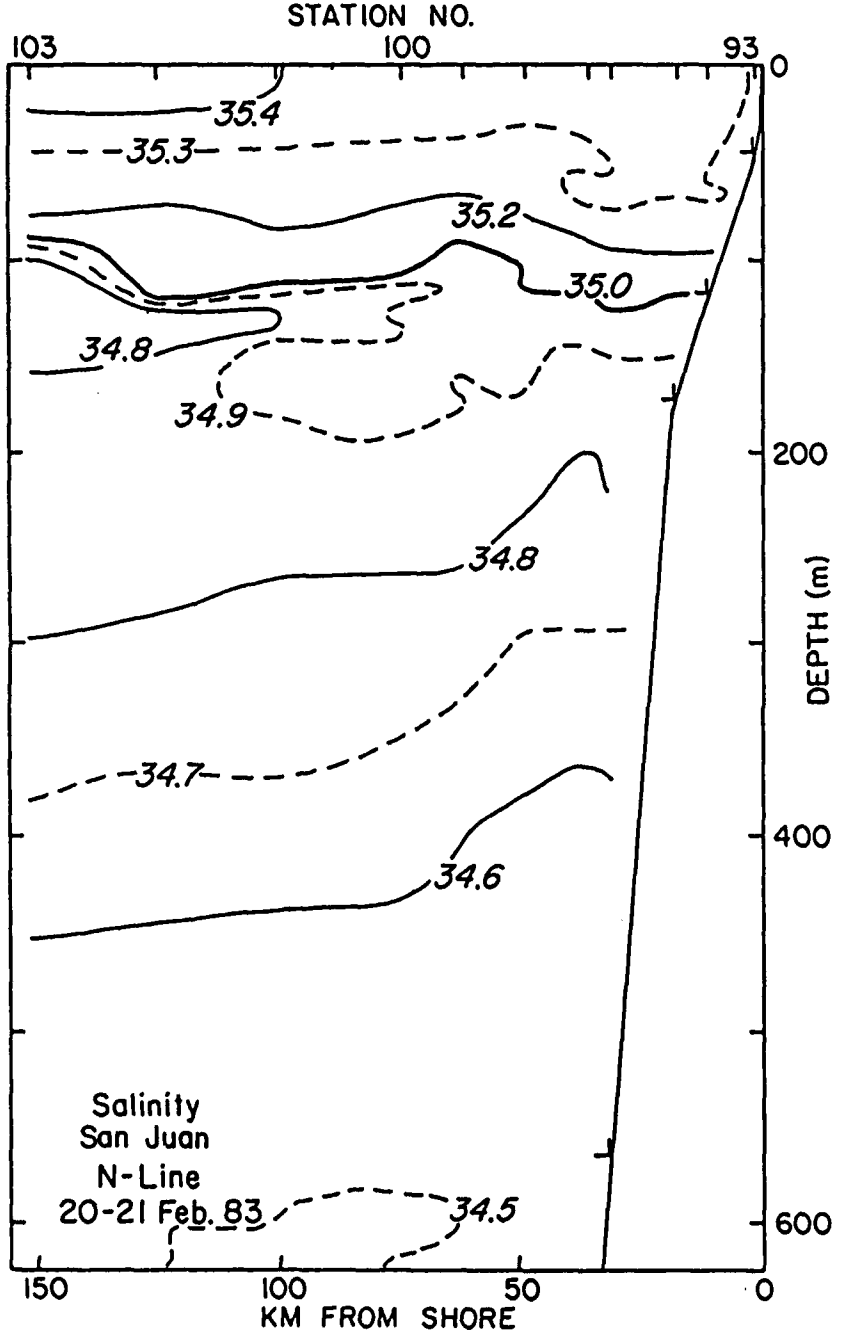

Salinity
Lobos de Afuera
C-Line
12-13 February 1983
STATION NO.
51
49
47
45
43
DEPTH (m)
0
200
400
600
0
50
100
150
KM FROM SHORE
35.0
35.0
35.0
35.1
34.9
34.8
34.7
34.6

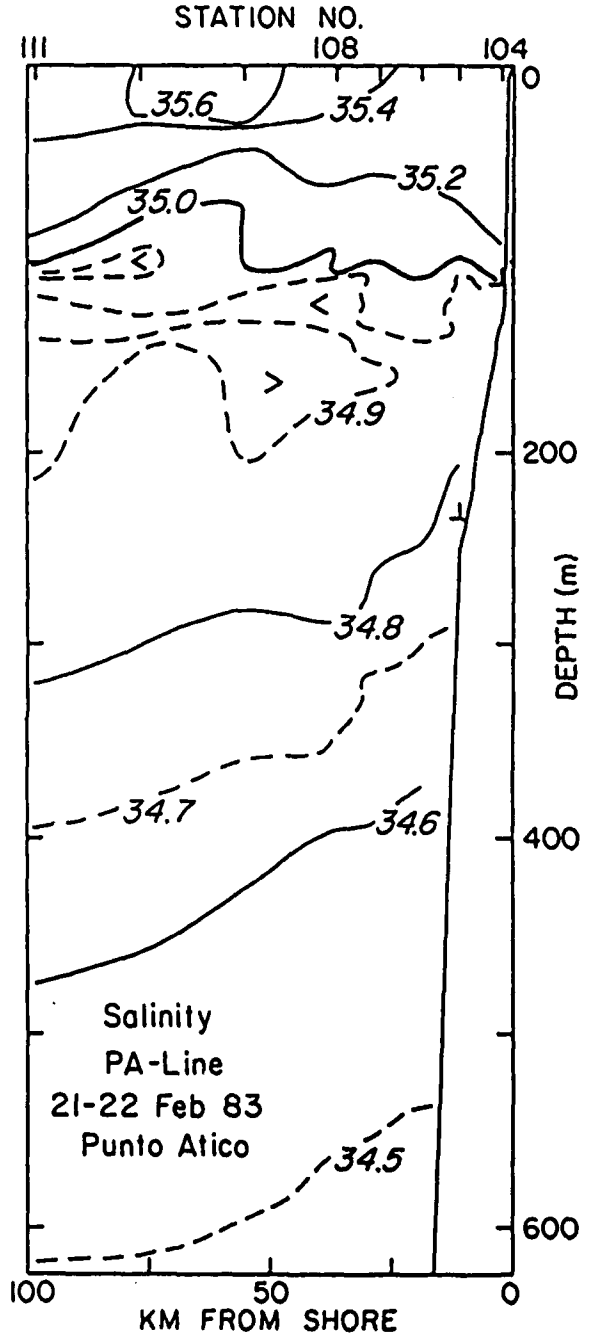

Salinity
Chimbote
D-Line
13-16 February 1983
DEPTH (m)
0
200
400
600
STATION NO.
52
54
56
58
60
63
65
64
KM FROM SHORE
0
100
200
35.0
35.2
35.4
34.9
34.8
34.7
34.6

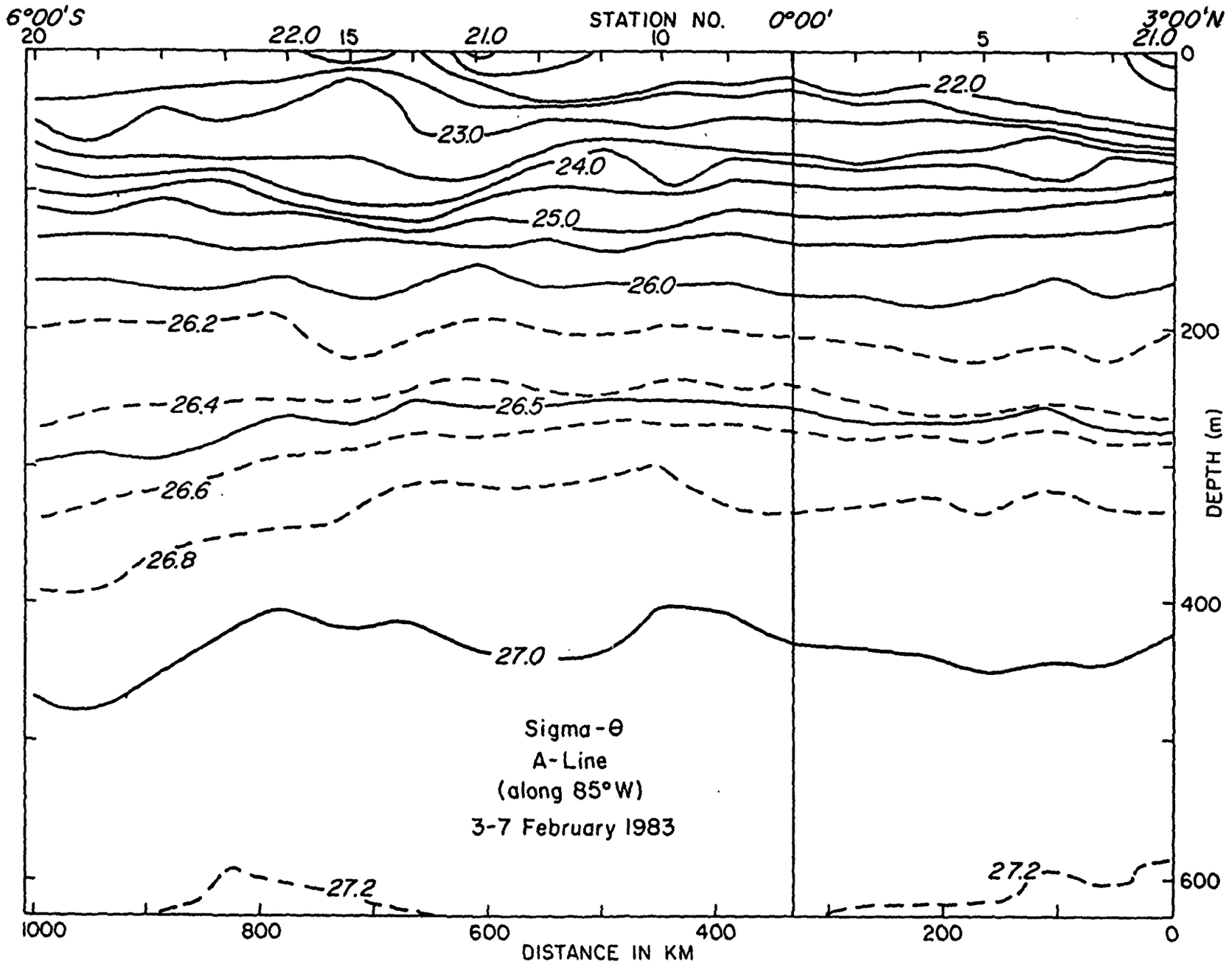

Salinity
Chimbote
D-Line
15-17 February 1983
DEPTH (m)
STATION NO.
KM FROM SHORE
0
200
400
600
64
66
68
70
72
74
76
0
50
100
150
200
250
< 35.0
35.2
35.4
35.0
34.9
34.8
34.7
34.6

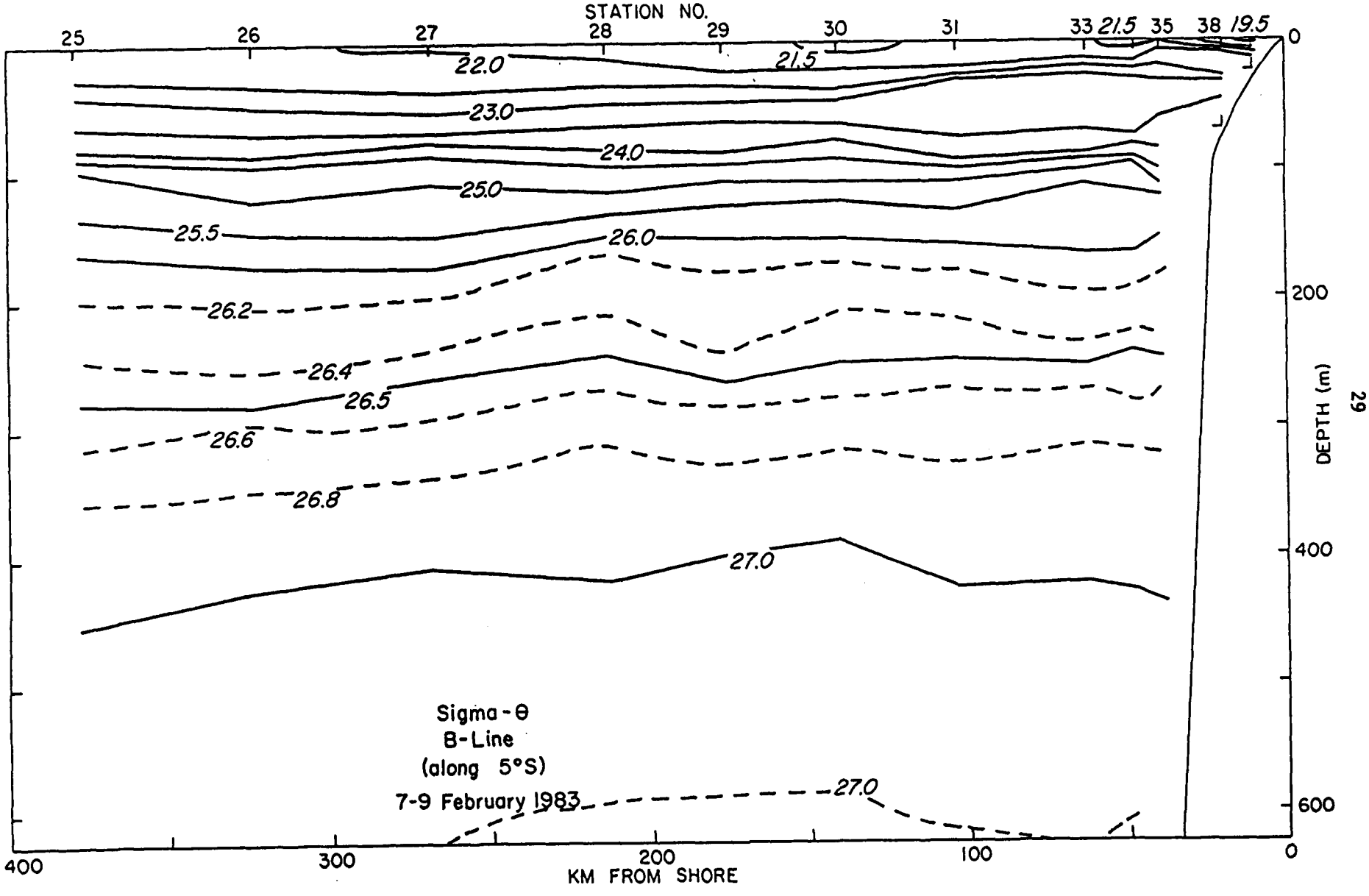

STATION NO.
79
81
DEPTH (m)
0
200
400
600
0
50
100
KM FROM SHORE
<35.2
35.3
<35.3
35.5
35.4
35.1
35.0
34.9
34.8
34.7
34.6
Salinity
Punta Supe
PS-Line
17-18 Feb. 1983

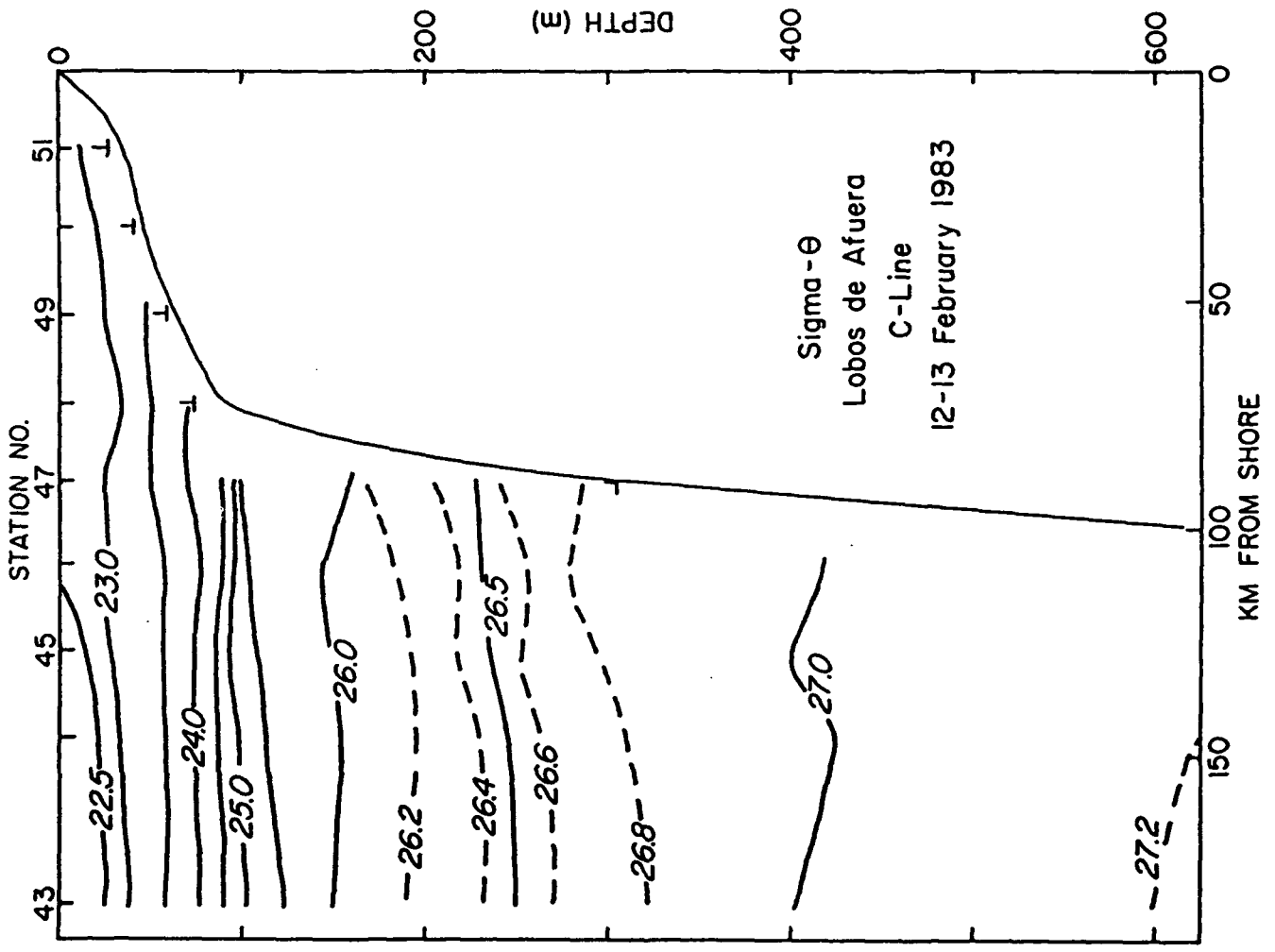

Salinity
Callao
E-Line
18-19 Feb. 1983
DEPTH (m)
0
200
400
600
STATION NO.
82
84
86
89
90
91
92
KM FROM SHORE
0
100
200
35.2
35.4
35.2
35.4
35.0
34.9
34.8
34.7
34.6

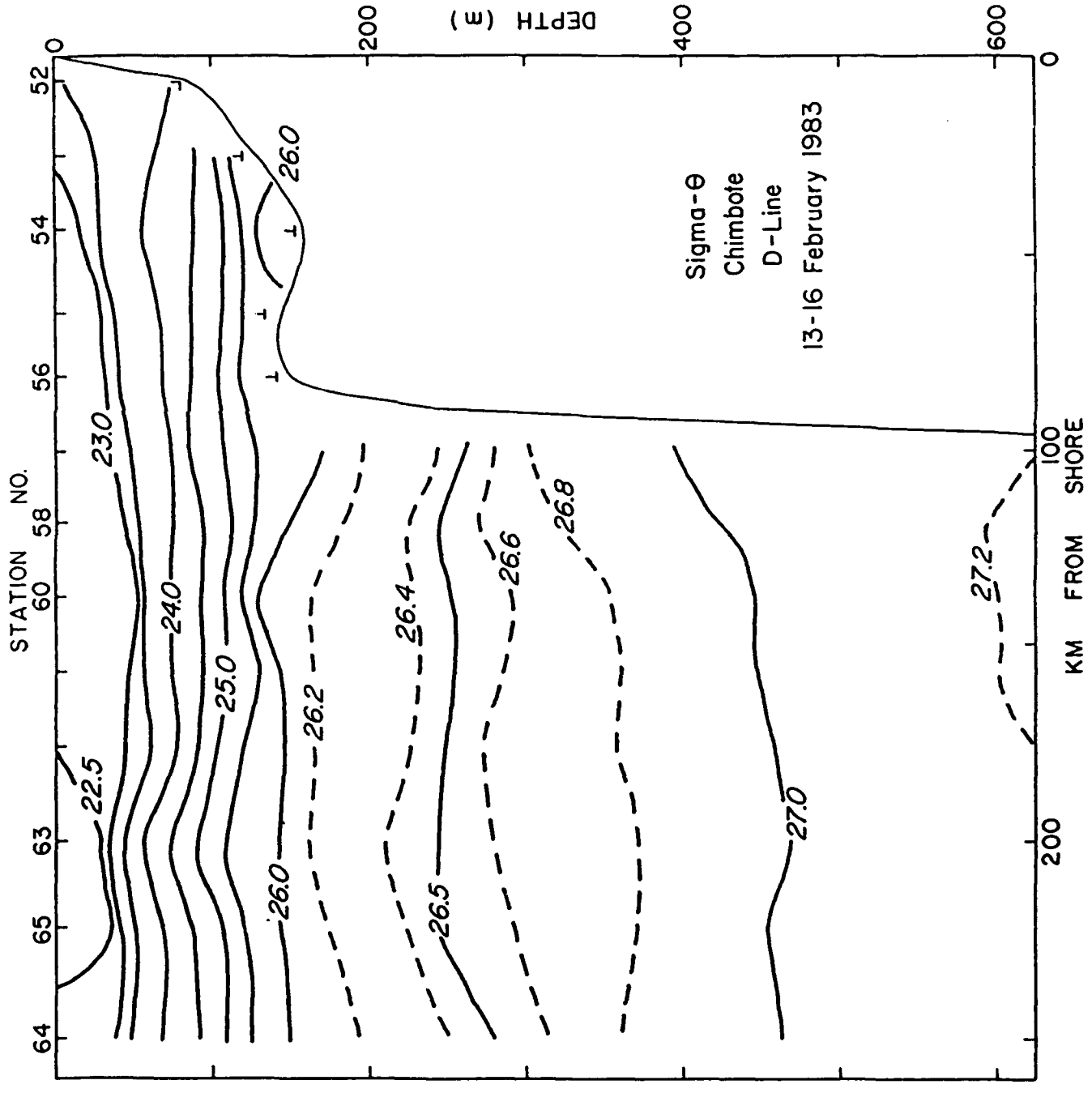

STATION NO.
103
100
93
0
35.4
35.3
35.2
35.0
34.8
34.9
34.8
34.7
34.6
34.5
200
400
600
DEPTH (m)
Salinity
San Juan
N-Line
20-21 Feb. 83
150
100
50
0
KM FROM SHORE

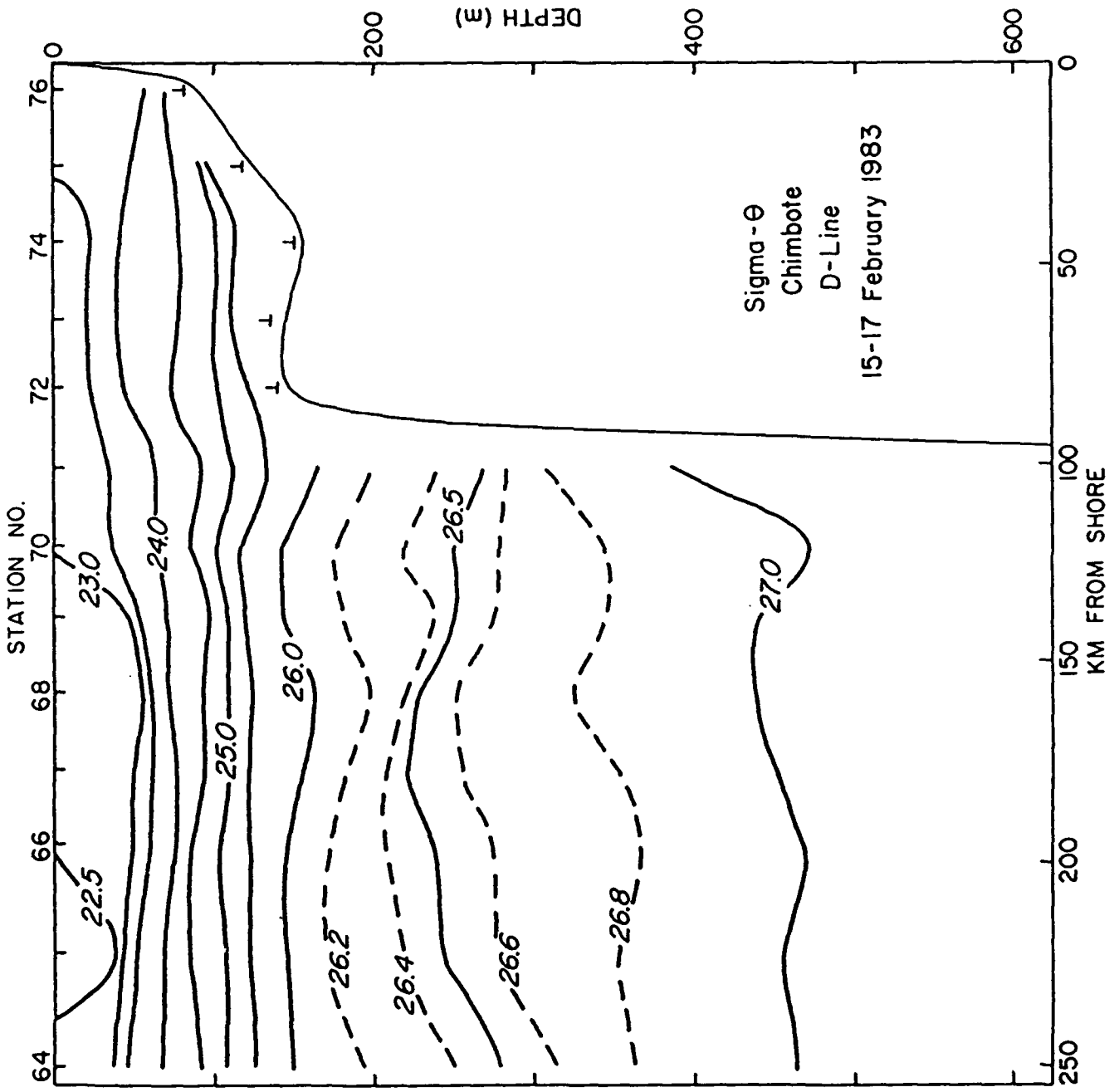

STATION NO.
111
108
104
0
35.6
35.4
35.2
35.0
34.9
34.8
34.7
34.6
34.5
200
400
600
DEPTH (m)
Salinity
PA-Line
21-22 Feb 83
Punto Atico
100
50
0
KM FROM SHORE

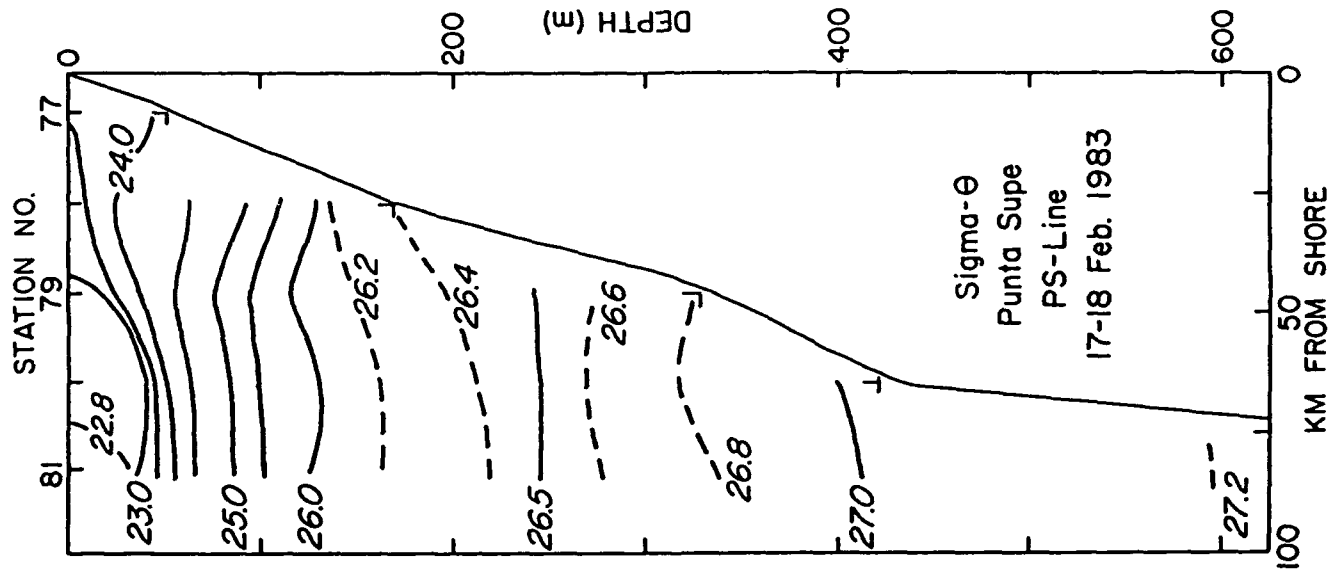

6°00'S
20
22.0
15
21.0
STATION NO.
10
0°00'
5
3°00'N
21.0
0
22.0
23.0
24.0
25.0
26.0
26.2
200
26.4
26.5
26.6
26.8
400
27.0
Sigma-θ
A-Line
(along 85°W)
3-7 February 1983
27.2
27.2
600
1000
800
600
400
200
0
DISTANCE IN KM
DEPTH (m)

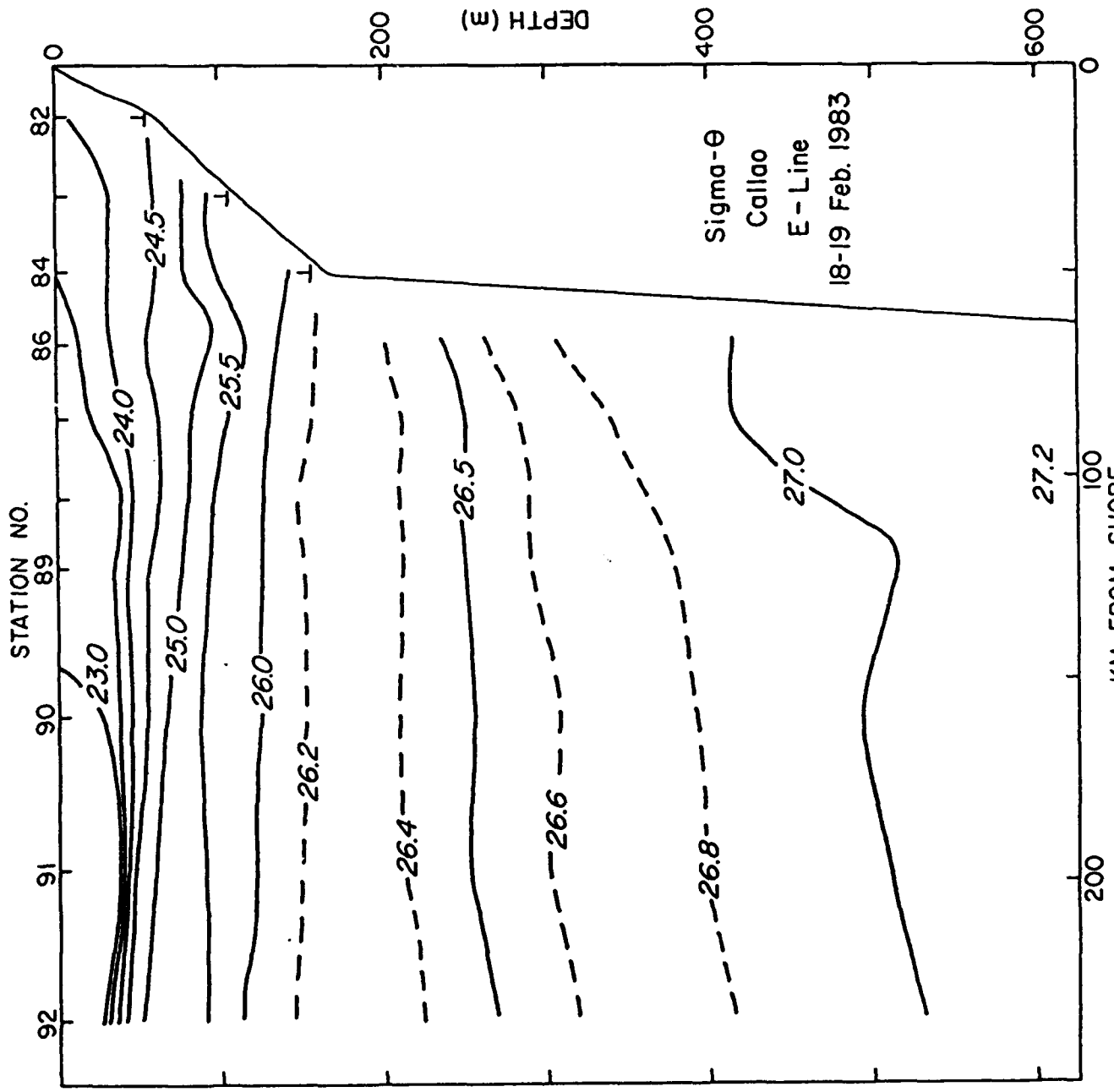

STATION NO.
25
26
27
28
29
30
31
33
21.5
35
38
19.5
0
22.0
21.5
23.0
24.0
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
200
400
600
DEPTH (m)
Sigma-θ
B-Line
(along 5°S)
7-9 February 1983
27.0
400
300
200
100
0
KM FROM SHORE

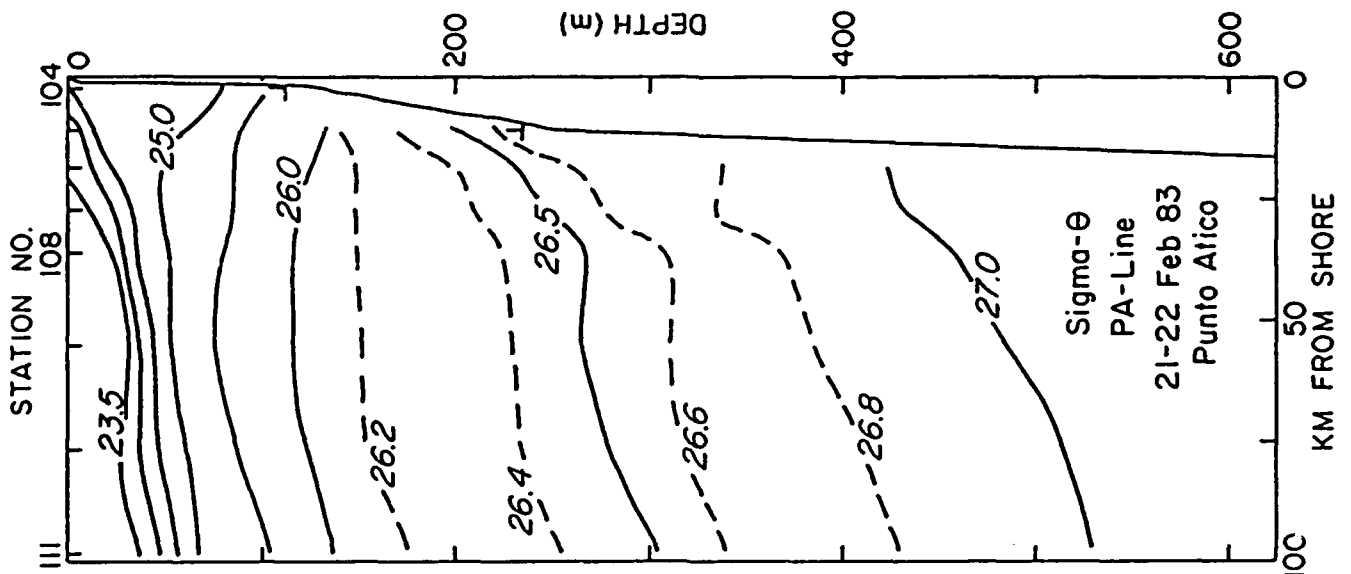

DEPTH (m)
0
200
400
600
STATION NO.
43
45
47
49
51
0
50
100
150
KM FROM SHORE
Sigma-θ
Lobos de Afuera
C-Line
12-13 February 1983
22.5
23.0
24.0
25.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0
27.2

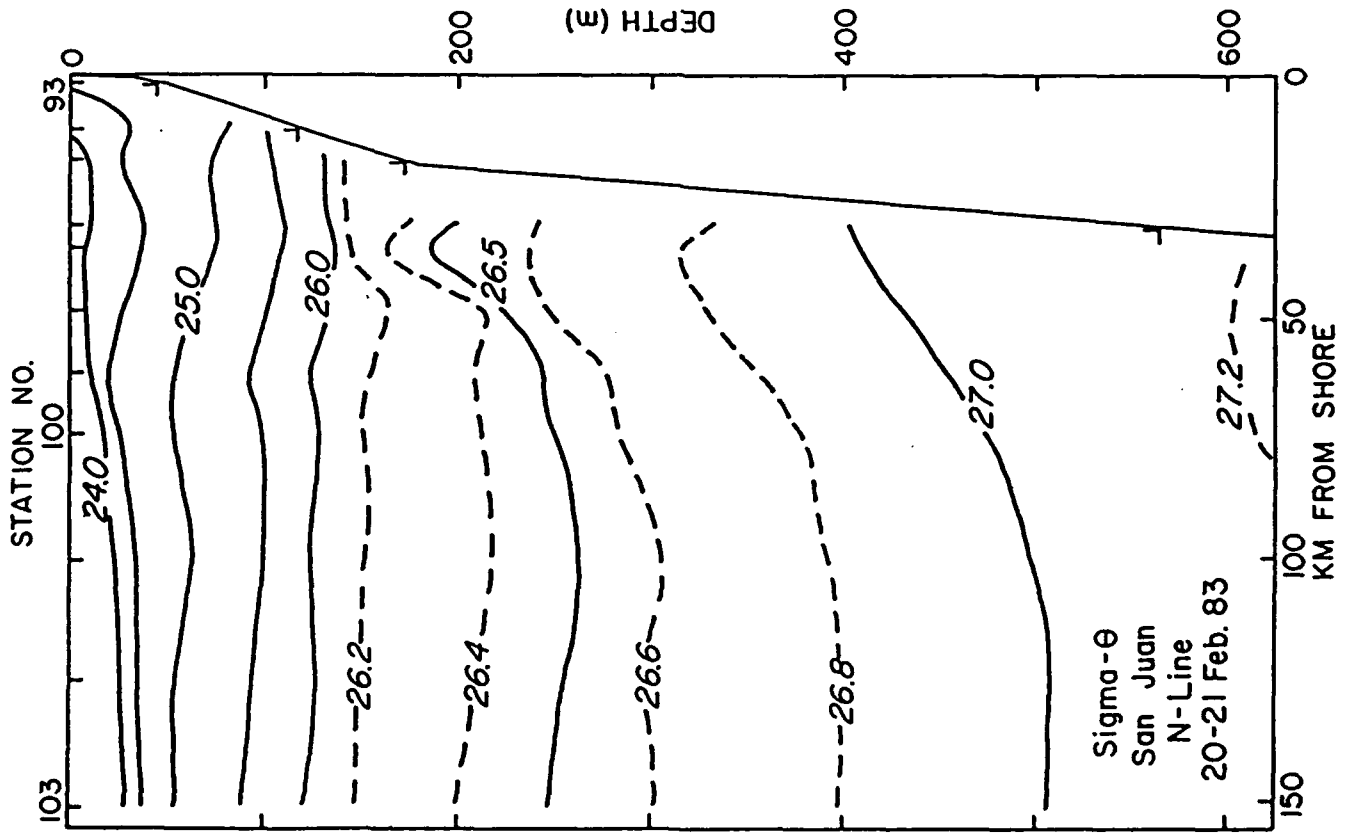

DEPTH (m)
0
200
400
600
STATION NO.
52
54
56
58
60
63
65
64
0
100
200
KM FROM SHORE
Sigma-θ
Chimbote
D-Line
13-16 February 1983
22.5
23.0
24.0
25.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0
27.2

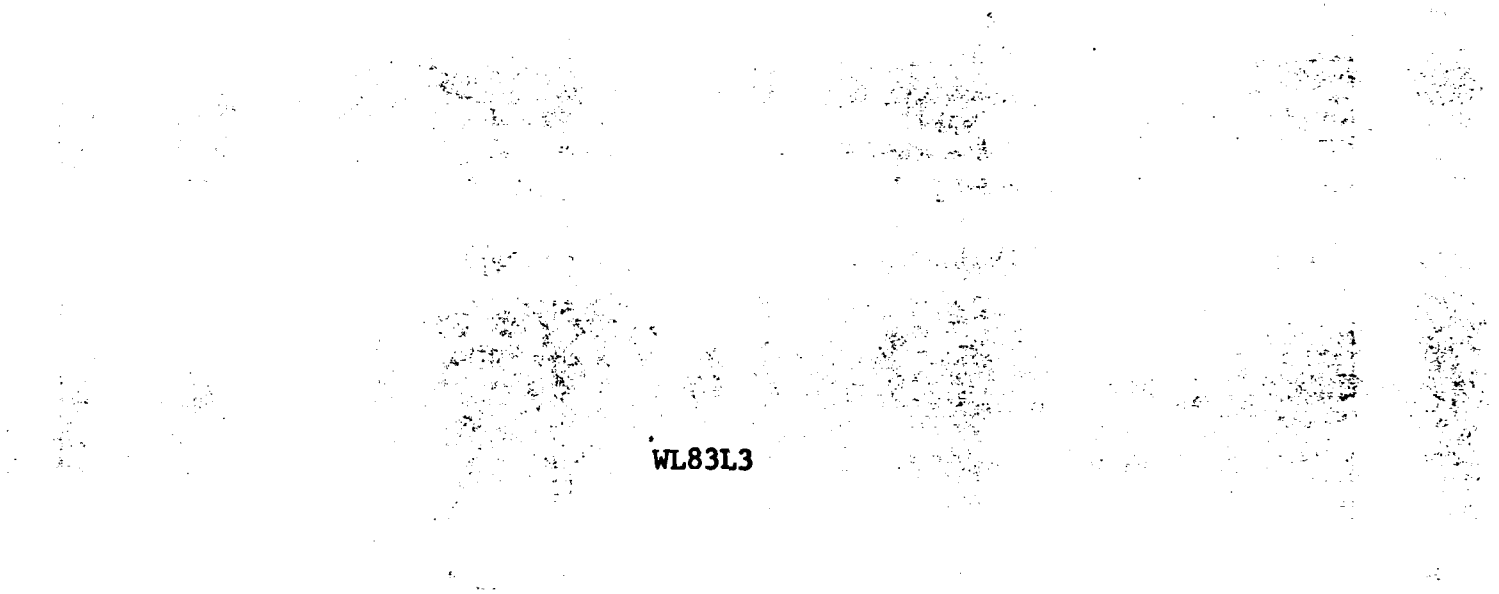

Sigma-θ
Chimbote
D-Line
15-17 February 1983
DEPTH (m)
0
200
400
600
STATION NO.
76
74
72
70
68
66
64
KM FROM SHORE
0
50
100
150
200
250
22.5
23.0
24.0
25.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0


STATION NO.
77
79
81
0
200
400
600
DEPTH (m)
0
50
100
KM FROM SHORE
Sigma-θ
Punta Supe
PS-Line
17-18 Feb. 1983
24.0
22.8
23.0
25.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0
27.2


Sigma-θ
Callao
E-Line
18-19 Feb. 1983
DEPTH (m)
0
200
400
600
STATION NO.
82
84
86
89
90
91
92
KM FROM SHORE
0
100
200
23.0
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
27.2


STATION NO.
104
108
111
DEPTH (m)
0
200
400
600
23.5
25.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0
Sigma-θ
PA-Line
21-22 Feb 83
Punto Atico
0
50
100
KM FROM SHORE


STATION NO.
93
100
103
DEPTH (m)
0
200
400
600
24.0
25.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0
27.2
Sigma-θ
San Juan
N-Line
20-21 Feb. 83
0
50
100
150
KM FROM SHORE



WL83L3

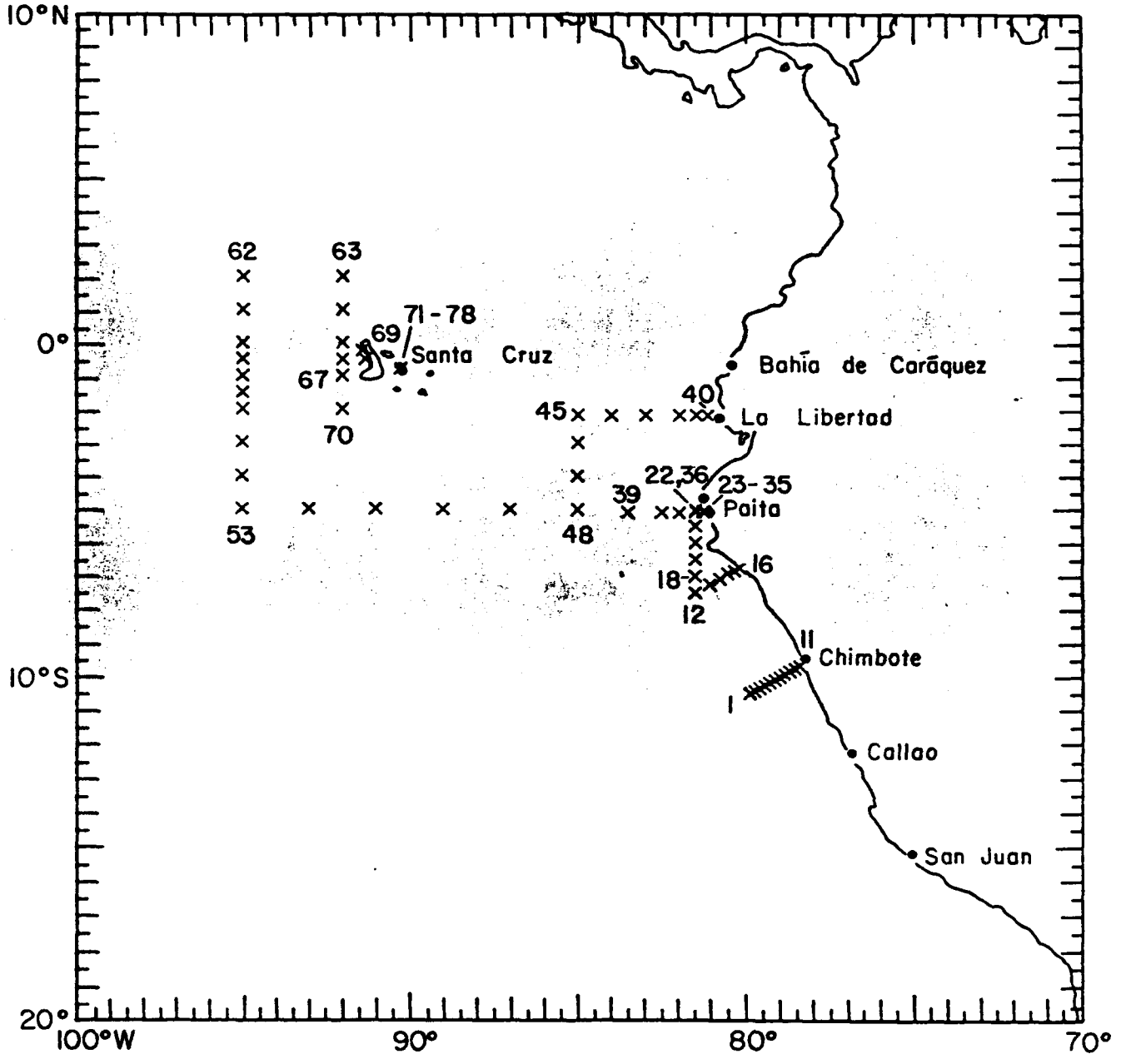


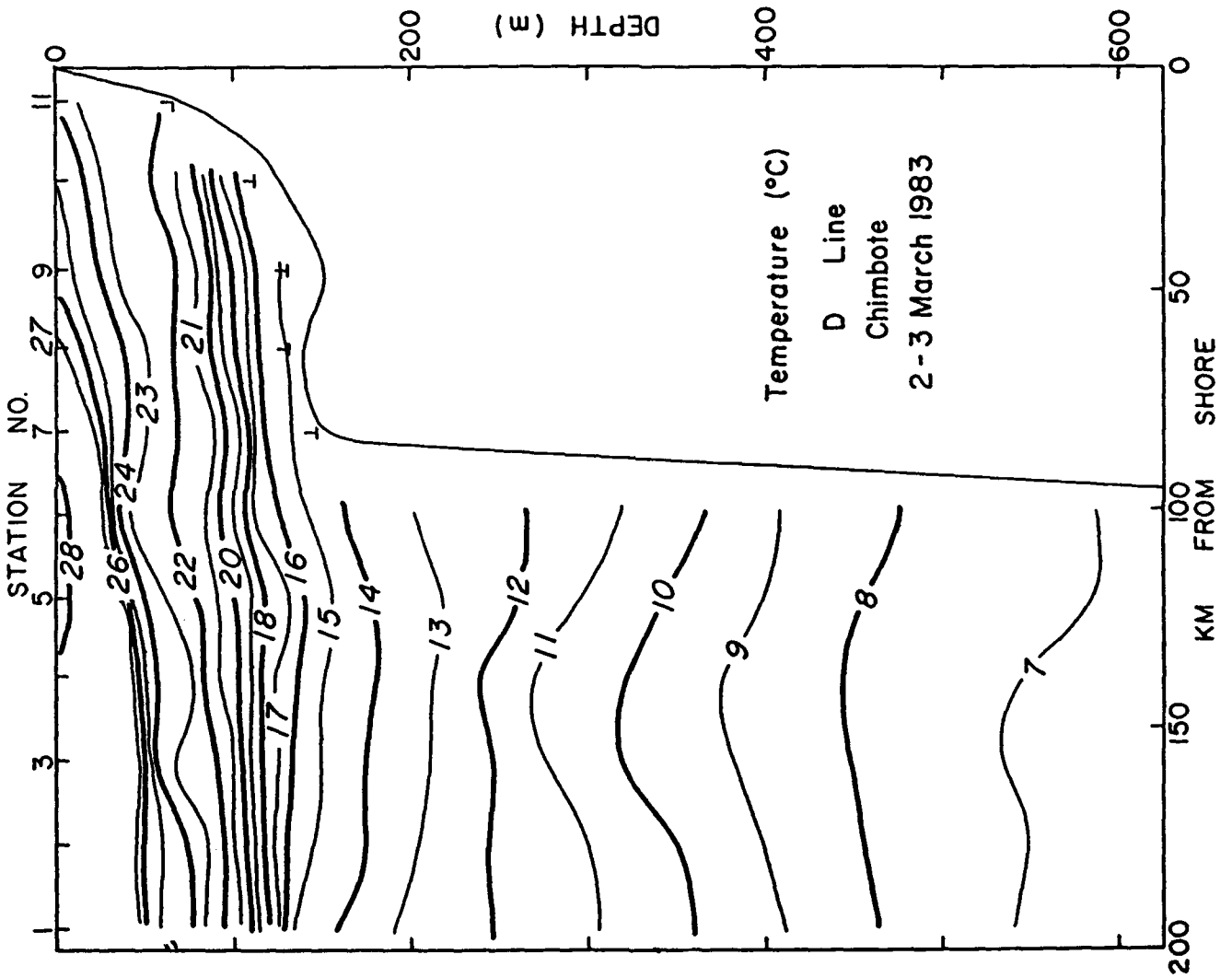
Figure 2. Location of CTD stations during WL83L3, 1-23 March 1983.

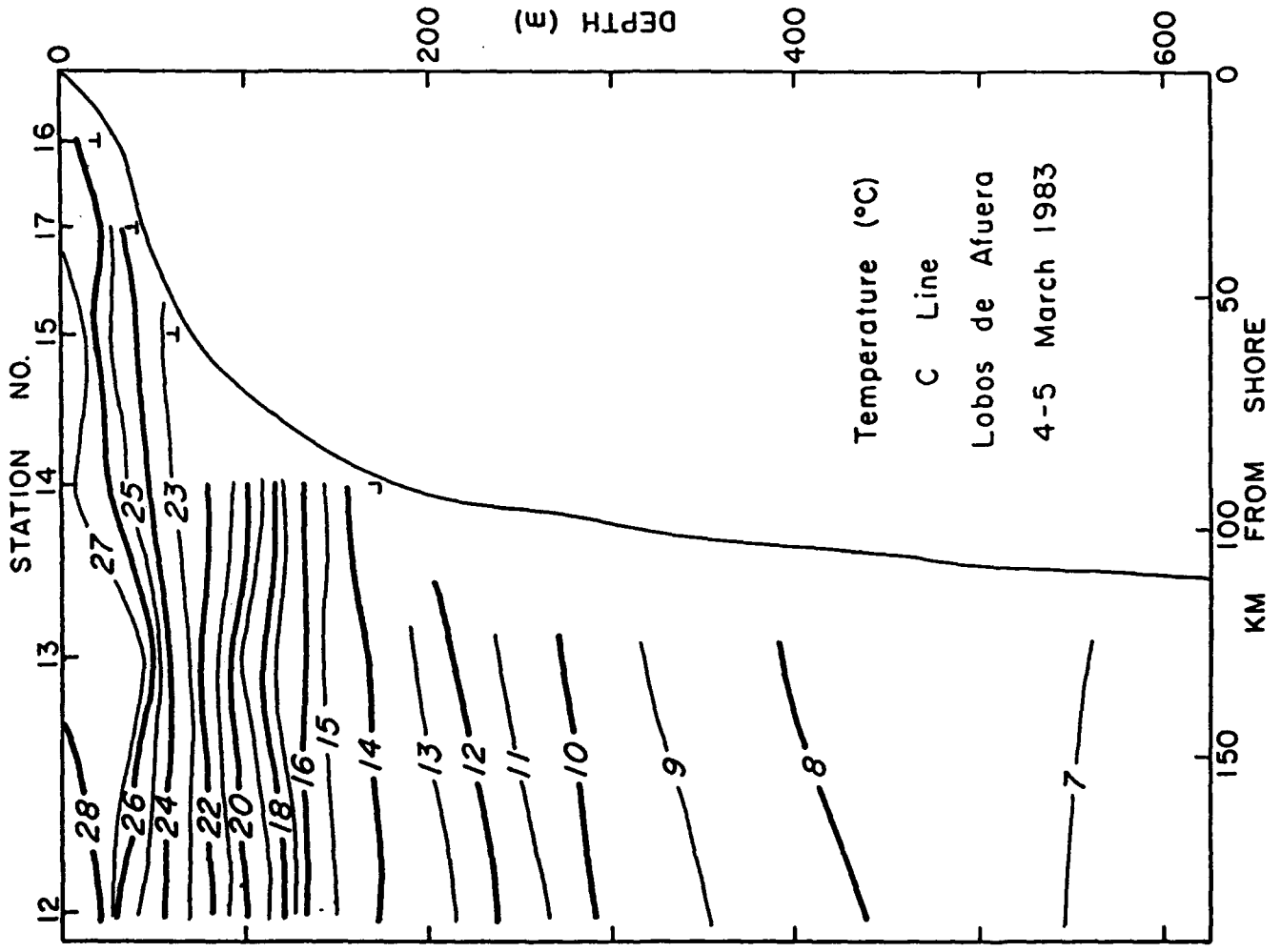
Table 3. List of stations occupied during WL83L3 showing date, time, location, wind speed and direction and atmospheric pressure.

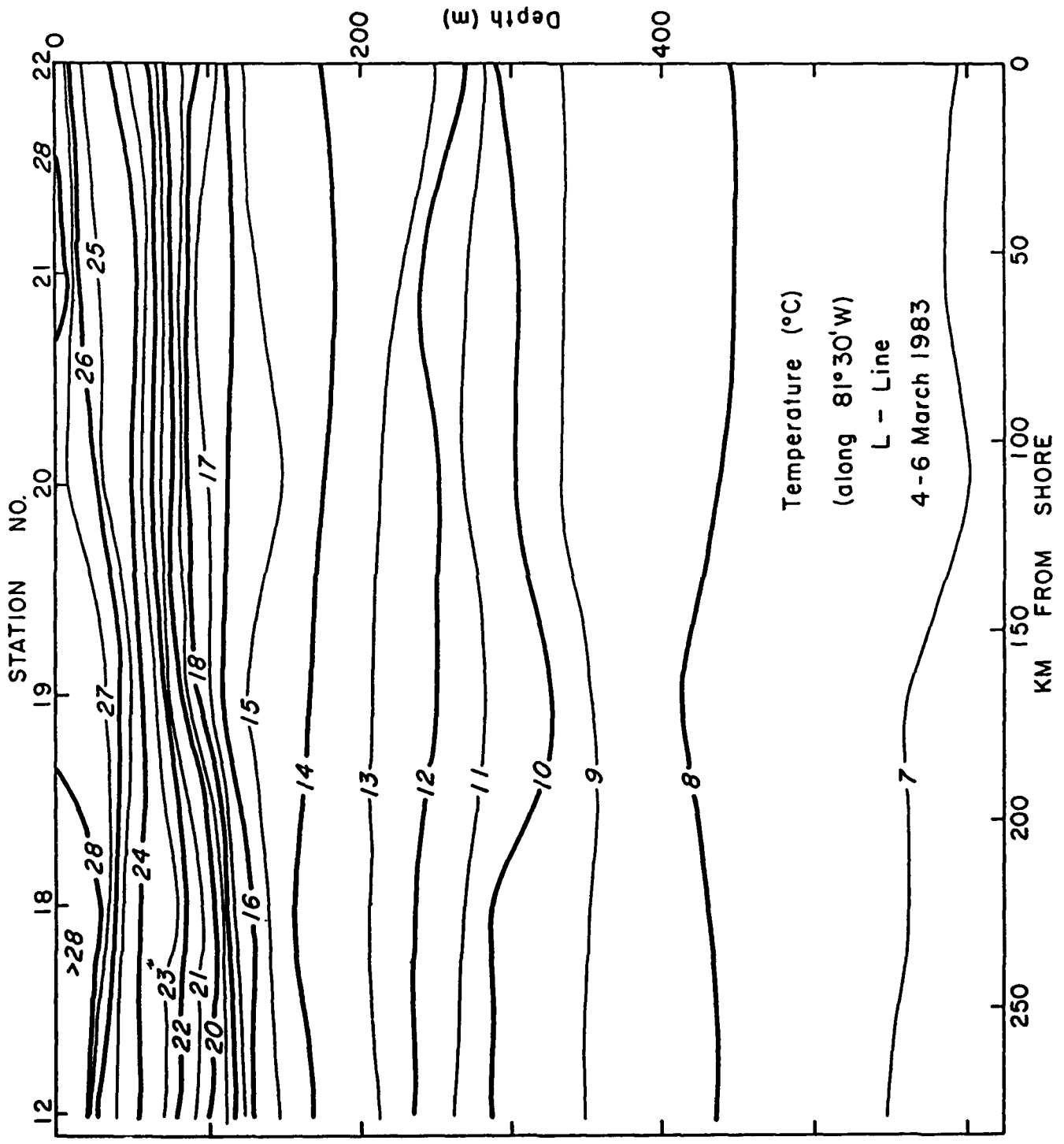
Date (1983)	Time (GMT)	Station No.	Station Name	Location Lat.	Location Long.	Wind Dir (°T)	Wind Spd (kts)	Pressure (mb)
Mar 2	0818	1	D-11	10°30.0S	79°53.9W	140	12	1009.5
2	1001	1-2	D-11	10 28.6S	79 52.3	150	10	1010.0
2	1220	2	D-10	10 25.1S	79 44.9	150	10	1010.5
2	1529	3	D-9	10 20.0S	79 36.0	150	10	1012.0
2	1739	4	D-8	10 15.0S	79 27.0	170	4	1011.9
2	2037	5	D-7	10 10.0S	79 18.0	140	8	1009.7
2	2245	6	D-6	10 05.0S	79 09.1	160	10	1009.5
3	0139	7	D-5	10 00.0S	79 00.0	150	12	1010.0
3	0350	8	D-4	9 55.0S	78 51.0	150	10	1011.6
3	0719	9	D-3	9 49.5S	78 42.9	150	10	1009.1
3	1002	10	D-2	9 45.0S	78 33.0	140	12	1008.8
3	1231	11	D-1	9 40.5S	78 24.5	140	8	1009.5
4	0725	12	C-9	7 30.0S	81 30.0	150	6	1010.0
4	1301	13	C-7	7 15 0S	81 04.0	140	6	1011.0
4	1609	14	C-5	7 05.0S	80 46.0	130	12	1010.5
4	1937	15	C-3	6 54.4S	80 31.7	150	12	1008.4
4	2248	16	C-1	6 45.0S	80 11.0	195	14	1008.0
5	0101	17	C-2	6 50.0S	80 20.0	160	10	1009.0
5	0756	18	L-2	6 59 9S	81 30.0	130	10	1009.7
5	1240	19	L-3	6 30.0S	81 30.0	140	10	1010.0
5	1626	20	L-4	6 00.0S	81 30.0	150	10	1010.4
5	2112	21	L-5	5 29.9S	81 30.1	210	12	1017.2
5	2239	21-2	L-5	5 29.9S	81 30.1	210	12	1017.2
5	2317	21-3	L-5	5 29.9S	81.30.1	210	12	1017.2
6	0223	22	L-6	5 00.0S	81 30.0	190	14	1009.0
6	0537	23	B-10A	5 03.4S	81 16.4	150	12	1010.4
6	0857	24	B-10A	5 03.4S	81 16.4	150	10	1010.4
6	0948	24-2	B-10A	5 03.4S	81 16.4	150	10	1010.4
6	1247	25	B-10A	5 03.6S	81 16.5	150	7	1009.8
6	2003	26	B-10A	5 04.1S	81 16.0	220	10	1007.3
6	2302	27	B-10A	5 04.0S	81 17.0	220	14	1007.2
7	0221	28	B-10A	5 04.0S	81 17.0	220	14	1009.1
7	0500	29	B-10A	5 04.6S	81 17.5	170	14	1011.0
7	0806	30	B-10A	5 04.0S	81 16.0	150	8	1008.9
7	1101	31	B-10A	5 04.0S	81 17.0	150	8	1009.0
7	1405	32	B-10A	5 04 0S	81 17.0	100	12	1009.0
7	1633	33	B-12A	5 05.0S	81 11.0	200	5	1009.0
7	1800	34	B-11A	5 05.1S	81 14.0	230	6	1007.9
7	2003	35	B-10A	5 05.0S	81 16.0	230	6	1007.0
7	1983	35-2	B-10A	5 05.0S	81.16.0	230	6	1007.0
7	2232	36	B-9A	5 05.0S	81 30.0	230	24	1006.2
8	0006	36-2	B-9A	5 05.0S	81 30.0	230	14	1006.2
8	0435	37	B-7A	5 05.0S	82 00.0	180	12	1009.1
8	0812	38	B-5A	5 05.0S	82 30.0	150	14	1008.0
8	1529	39	B-31	5 05.0S	83 30.0	140	12	1008.9
9	1956	40	S-6	2 10.6S	81 09.7	airs	--	1005.6
9	2323	41	S-5	2 10.0S	81 30.0	airs	--	1004.5

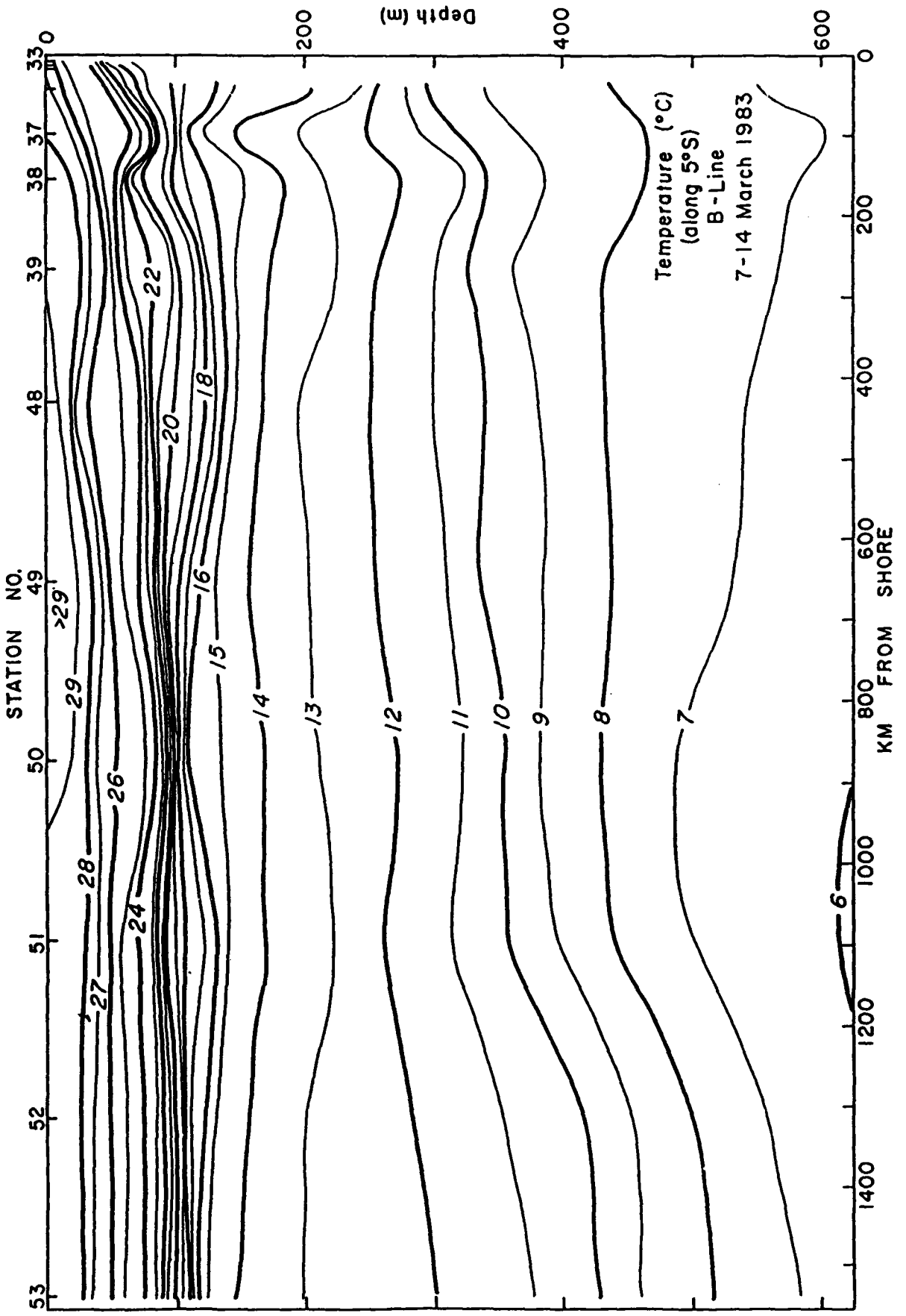
Table 3. cont'd.

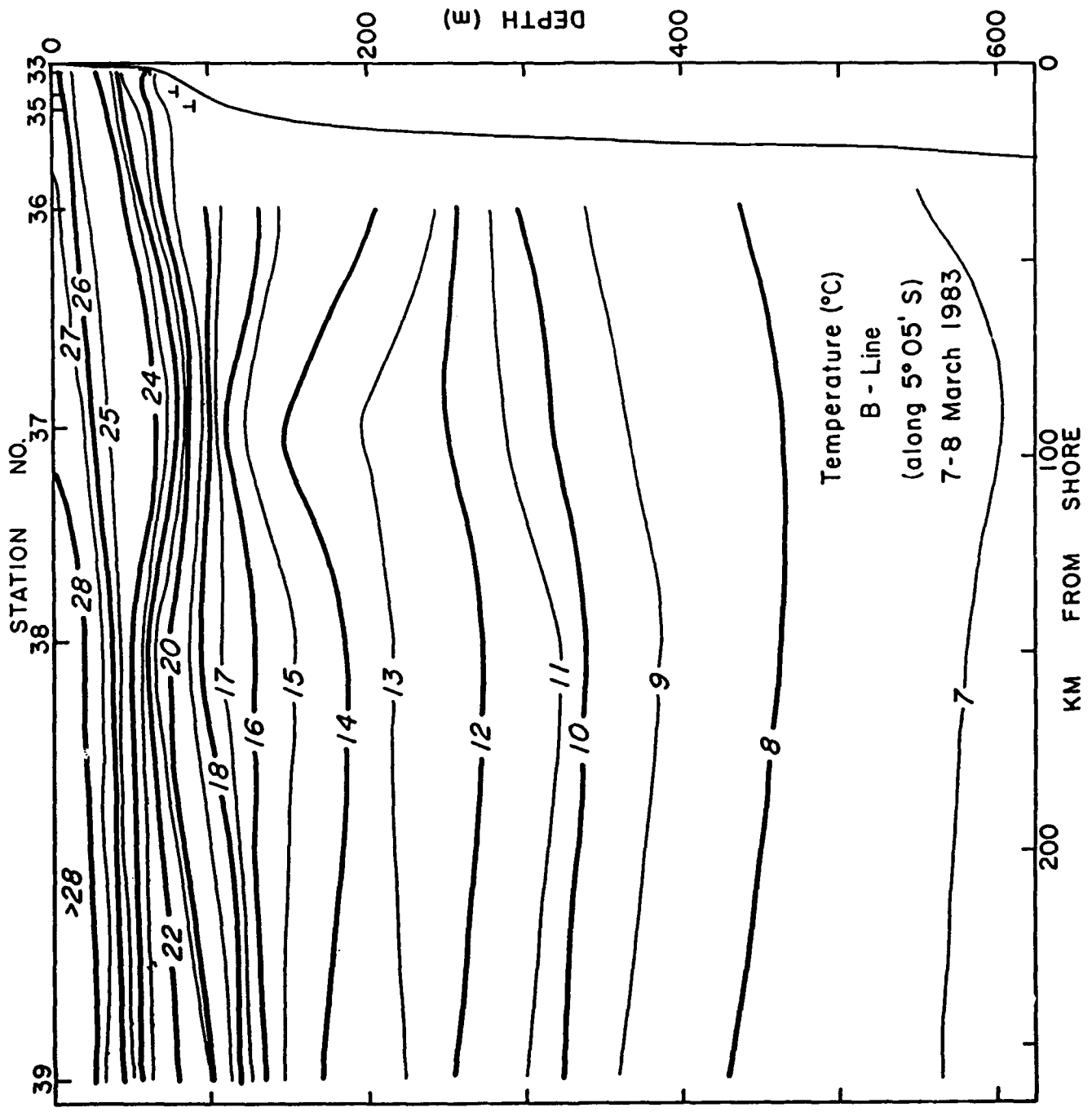
Date (1983)	Time (GMT)	Station No.	Name	Location Lat.	Long.	Wind Dir (°T)	Spd (kts)	Pressure (mb)
Mar 10	0411	42	S-4	2 10.0S	82 00.0	200	5	1008.0
10	1030	43	S-3	2°10.0S	83°00.0	180	7	1007.0
10	1826	44	S-2	2 10.5S	84 00.9	150	10	1008.4
10	0018	45	S-1	2 10.0S	85 00.0W	airs	--	1007.0
11	0749	46	A-13	3 00.0S	85.00.0	170	7	1008.0
11	1415	47	A-15	4 00.0S	85.00.0	090	10	1009.2
11	2253	48	A-17	5 00.9S	84 59.7	airs	--	1006.2
12	1049	49	B-2B	5 00.0S	87 00.0	160	10	1008.0
13	0012	50	B-4B	5 00.0S	89 00.0	airs	--	1007.5
13	1124	51	B-6B	5 00.0S	91 00.0	140	15	1007.0
13	2346	52	B-8B	5 00.0S	93 00.0	180	15	1006.9
14	1103	53	B-10B	5 00.0S	95 00.0	170	15	1008.0
14	1813	54	G-9	4 00.0S	95 00.0	170	4	1010.6
15	0040	55	G-8	3 00.0S	95 00.0	150	10	1007.5
15	0728	56	G-7	2 00.0S	95 00.0	140	3	1008.6
15	1154	57	G-6	1 30 0S	95 00.0	--	calm	1007.0
15	1552	58	G-5	1 00.0S	95 00.0	--	calm	1009.0
15	2023	59	G-4	0 29.5S	95 00.2	205	5	1008.0
16	0012	60	G-3	0 00.0	95 00.0	270	12	1007.0
16	0701	61	G-2	1 00.0N	95 00.0	190	6	1009.0
16	1409	62	G-1	2 00.0N	95 00.0	230	14	1008.0
17	0710	63	I-1	2 00.0N	92 00.0	260	12	1007.0
17	1532	64	I-2	1 00.0N	92 00.0	270	16	1008.0
17	2155	65	I-3	0 00.0	92 00.0	airs	--	1006.2
18	0231	66	I-4	0 30.0S	92 00.0	250	8	1007.0
18	0700	67	I-5	1 00.0S	92 00.0	airs	--	1007.8
18	1416	68	I-6	0 30.0S	91 20.0	airs	--	1008.1
18	1659	69	I-6A	0 15.0S	91 25.0	330	6	1008.2
19	0448	70	I-8	2 00.0S	92 00.0	330	14	1007.9
20	0524	71	AB-1	0 47.0S	90 16.9	airs	2	1008.0
20	0919	72	AB-2	0 47.2S	90 16.4	--	calm	1006.8
20	1329	73	AB-3	0 47.0S	90 16.6	airs	--	1007.2
20	1717	74	AB-4	0 47.0S	90 16.9	190	5	1008.2
20	2137	75	AB-5	0 47.0S	90 16.9	210	10	1006.0
21	0108	76	AB-6	0 47.0S	90 16.9	airs	--	1015.9
21	0517	77	AB-7	0 47.0S	90 16.9	190	5	1007.9
21	0917	78	AB-8	0 47.0S	90 16.9	airs	--	1006.0

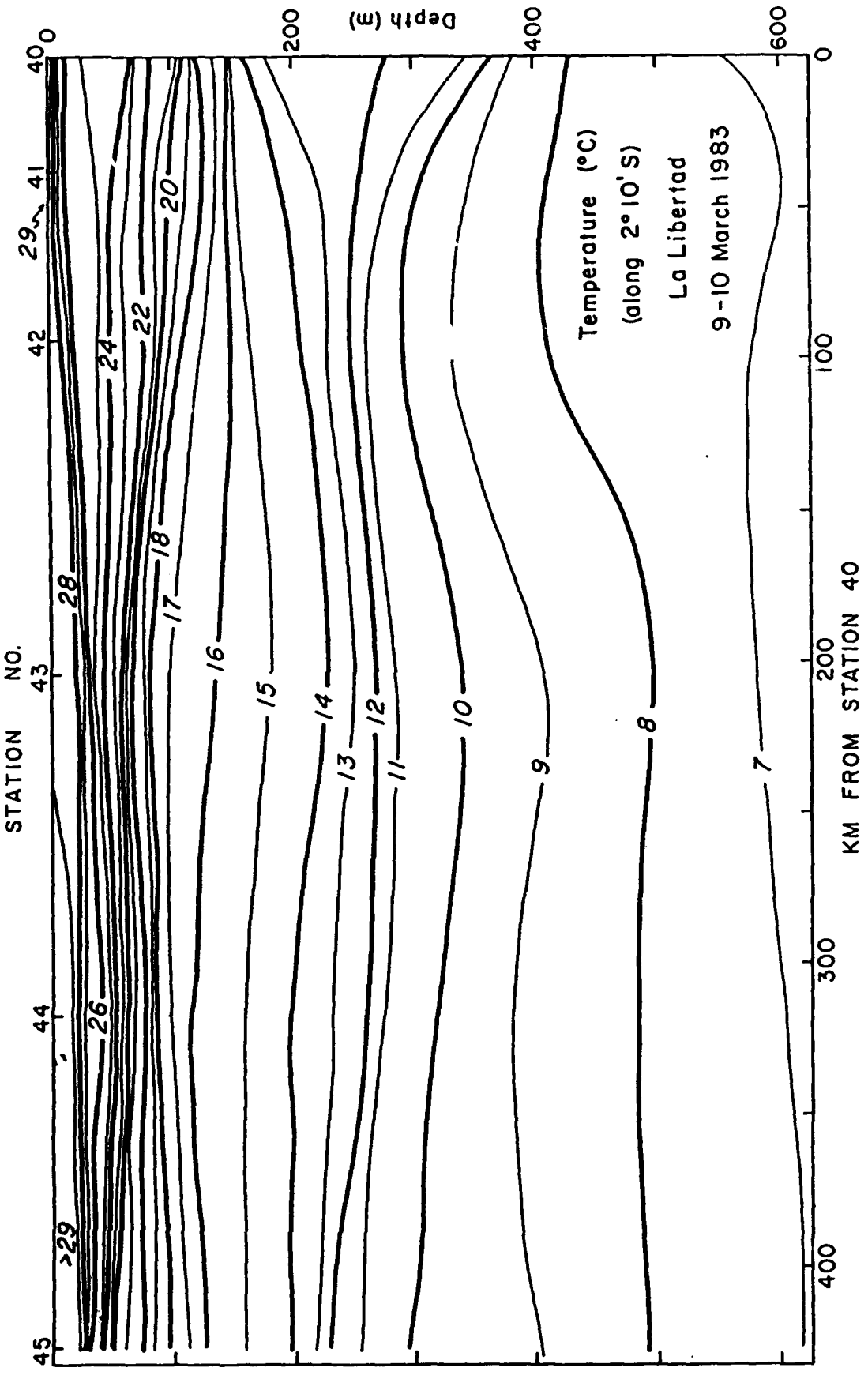

DEPTH (m)
0
200
400
600
STATION NO.
1
3
5
7
9
11
27
KM FROM SHORE
0
50
100
150
200
Temperature (°C)
D Line
Chimbote
2-3 March 1983
28
26
24
23
22
21
20
18
17
16
15
14
13
12
11
10
9
8
7

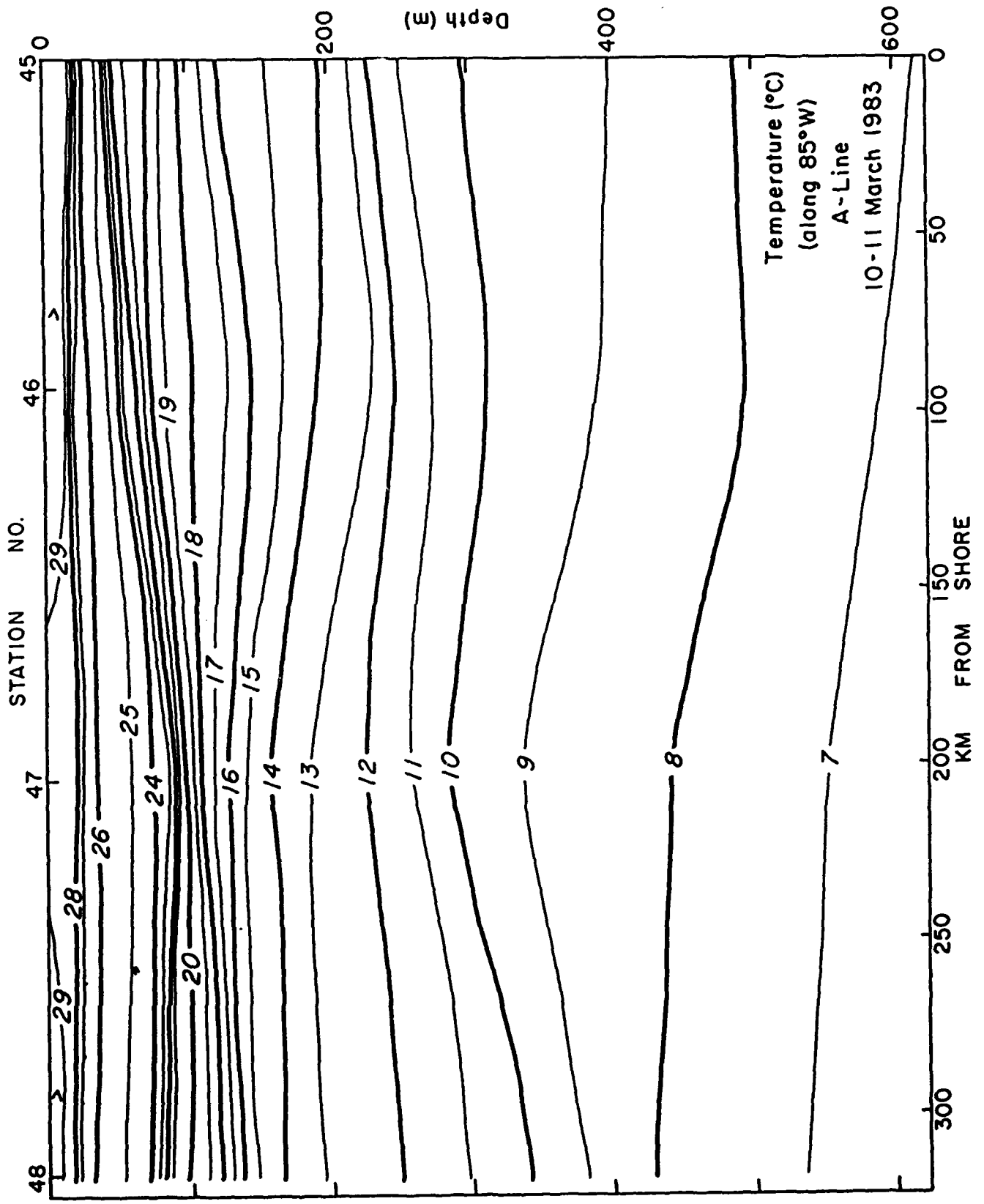

DEPTH (m)
0
200
400
600
STATION NO.
12
13
14
15
16
17
0
50
100
150
KM FROM SHORE
Temperature (°C)
C Line
Lobos de Afuera
4-5 March 1983
28
26
24
22
20
18
16
15
14
13
12
11
10
9
8
7
27
25
23

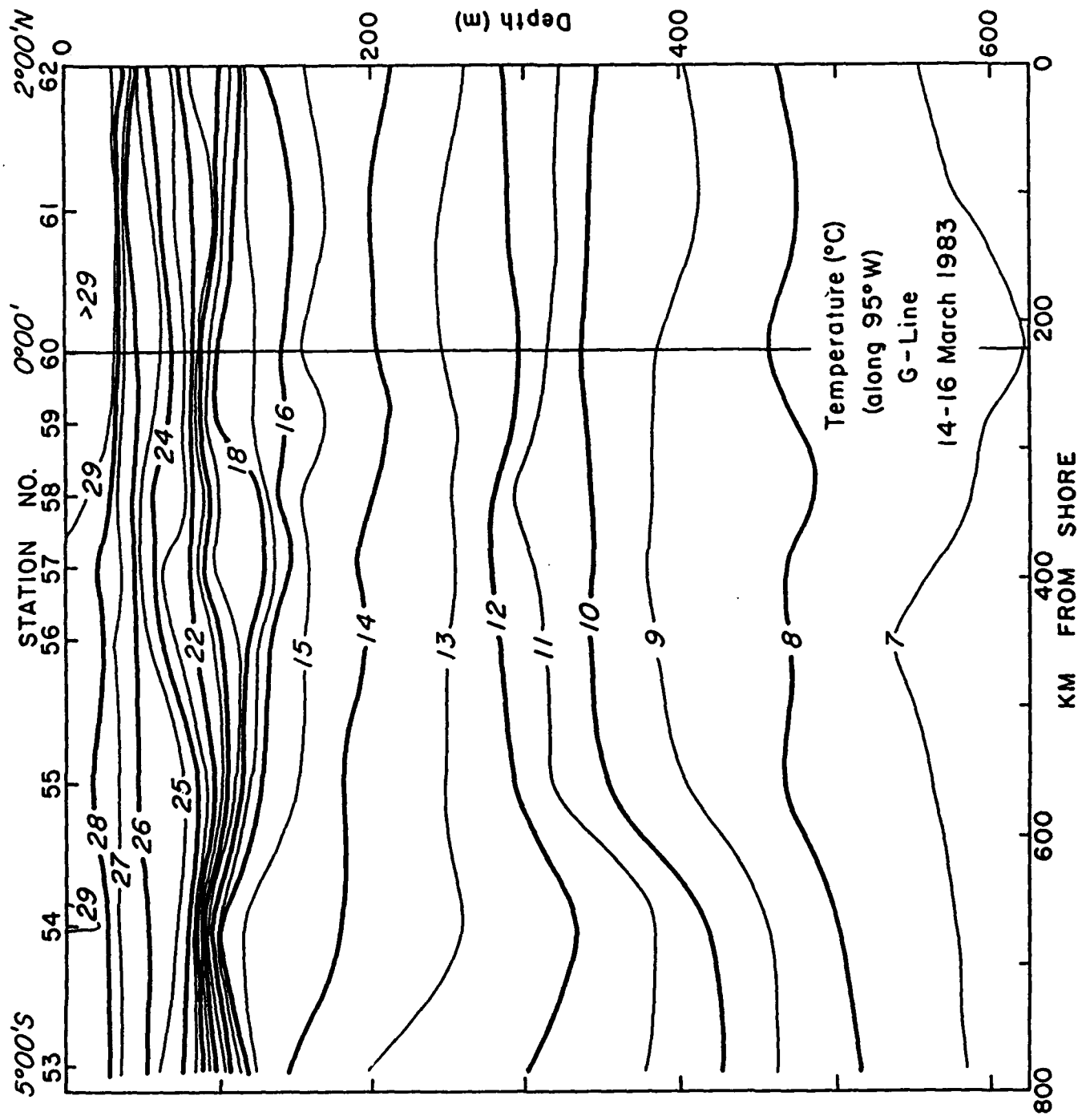

Depth (m)
0
200
400
STATION NO.
22
28
21
20
19
18
12
KM FROM SHORE
0
50
100
150
200
250
Temperature (°C)
(along 81°30'W)
L - Line
4-6 March 1983
>28
28
27
26
25
24
23
22
21
20
18
17
16
15
14
13
12
11
10
9
8
7

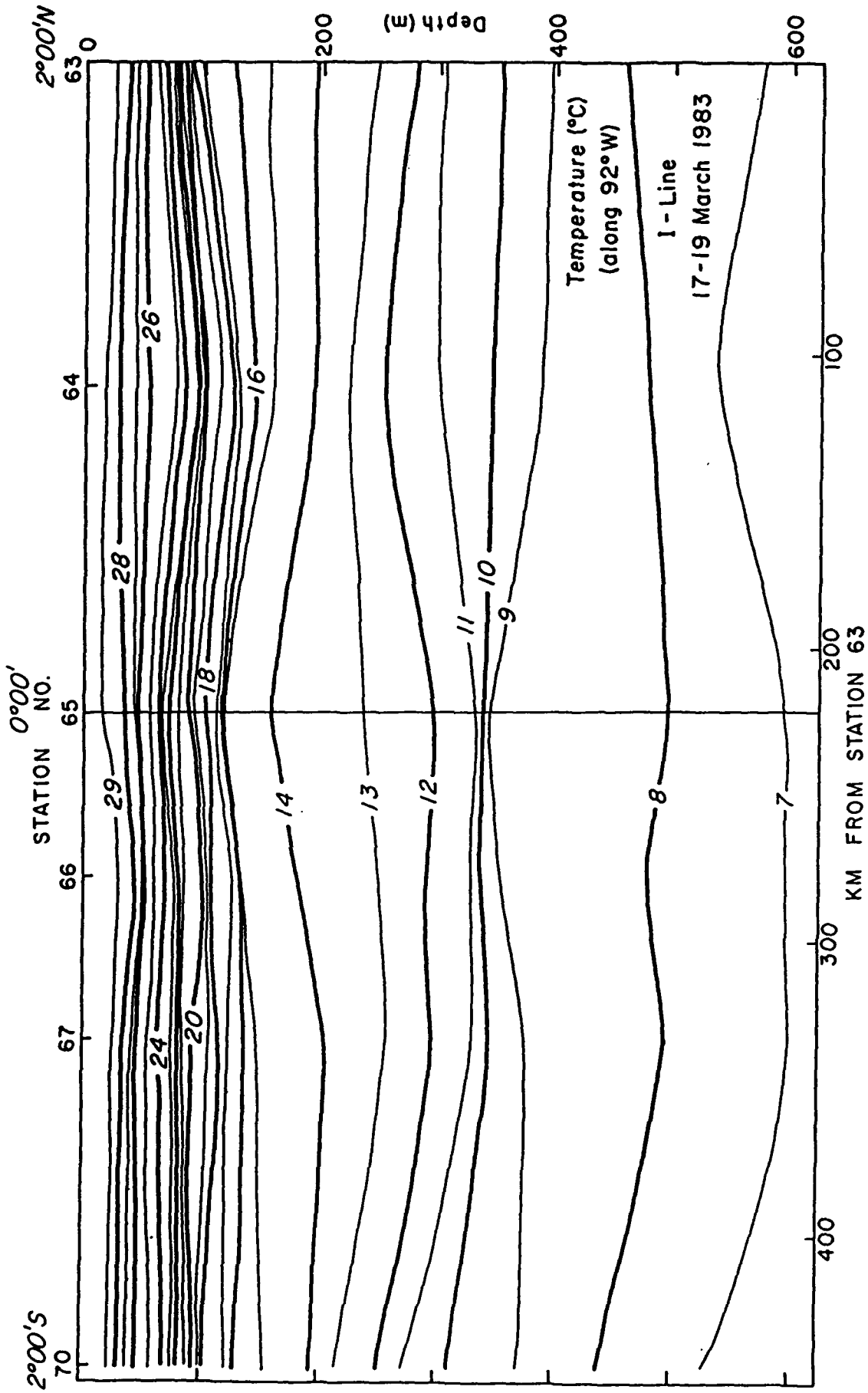

Depth (m)
0
200
400
600
STATION NO.
33
37
38
39
48
49
50
51
52
53
KM FROM SHORE
0
200
400
600
800
1000
1200
1400
Temperature (°C)
(along 5°S)
B-Line
7-14 March 1983
>29
29
28
27
26
24
22
20
18
16
15
14
13
12
11
10
9
8
7
6

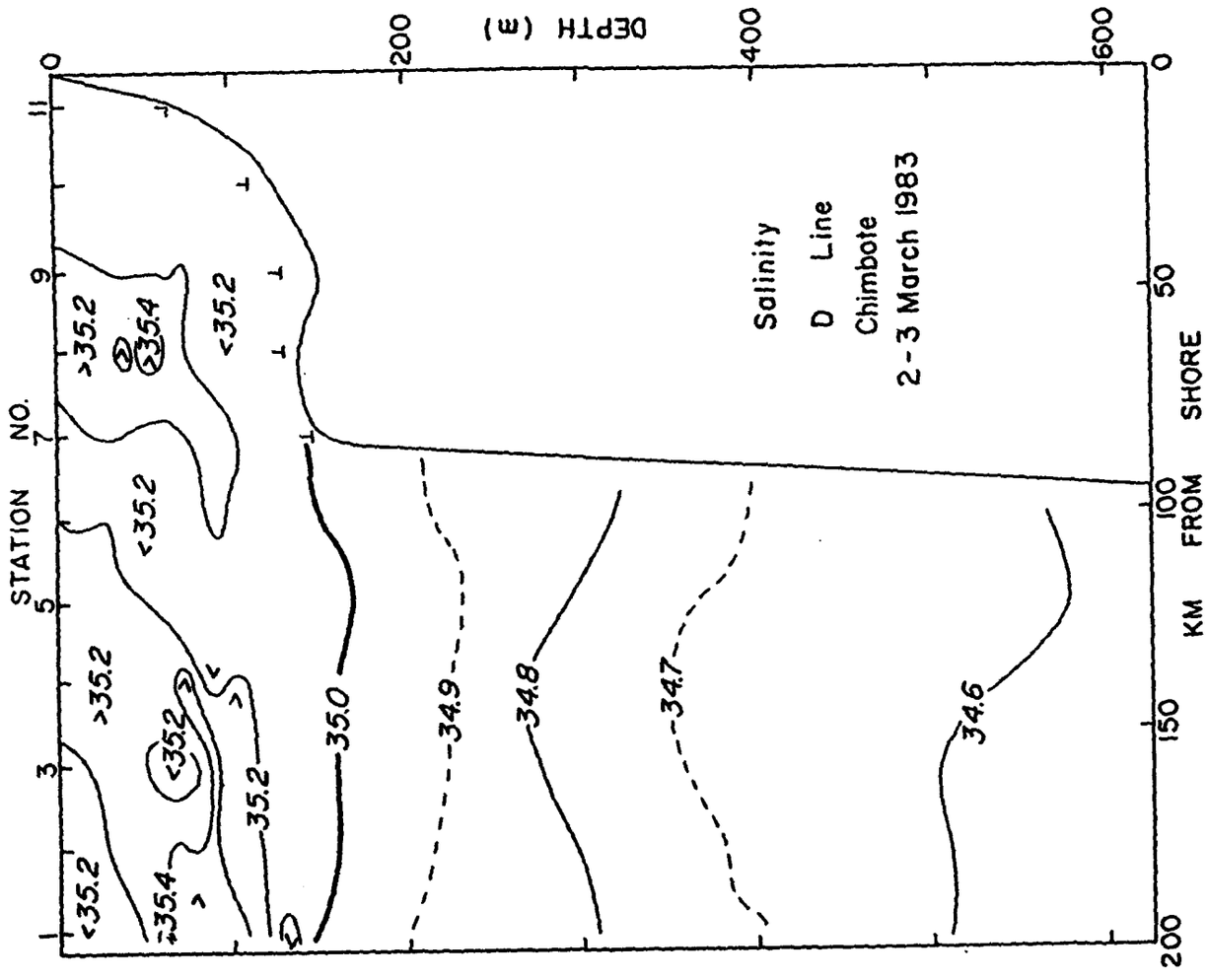

DEPTH (m)
0
200
400
600
STATION NO.
33
35
36
37
38
39
T
>28
28
27
26
25
24
22
20
18
17
16
15
14
13
12
11
10
9
8
7
Temperature (°C)
B - Line
(along 5° 05' S)
7-8 March 1983
0
100
200
KM FROM SHORE

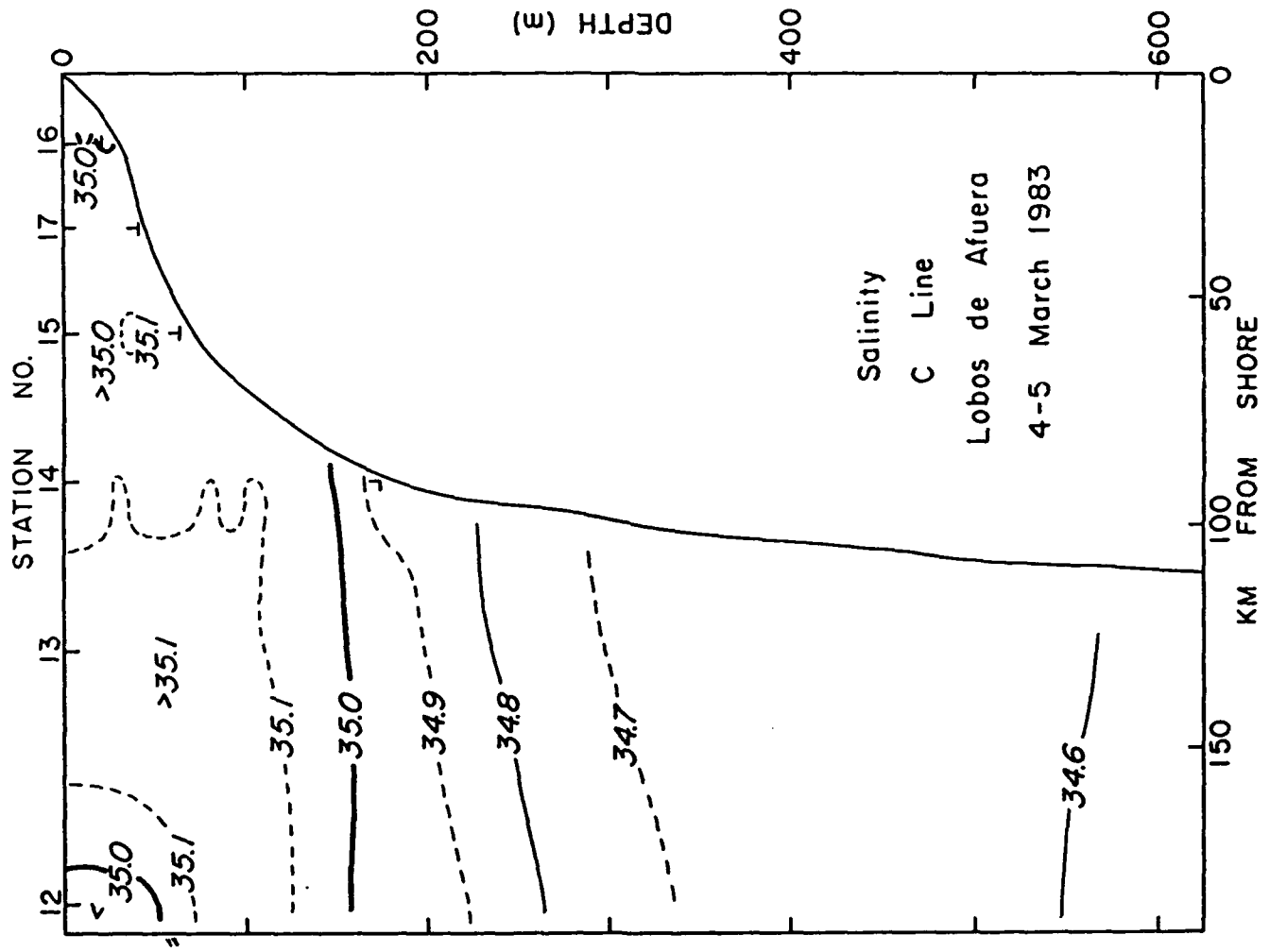

Depth (m)
0
200
400
600
STATION NO.
40
41
29
42
43
44
45
KM FROM STATION 40
0
100
200
300
400
Temperature (°C)
(along 2°10'S)
La Libertad
9-10 March 1983
>29
28
26
24
22
20
18
17
16
15
14
13
12
11
10
9
8
7

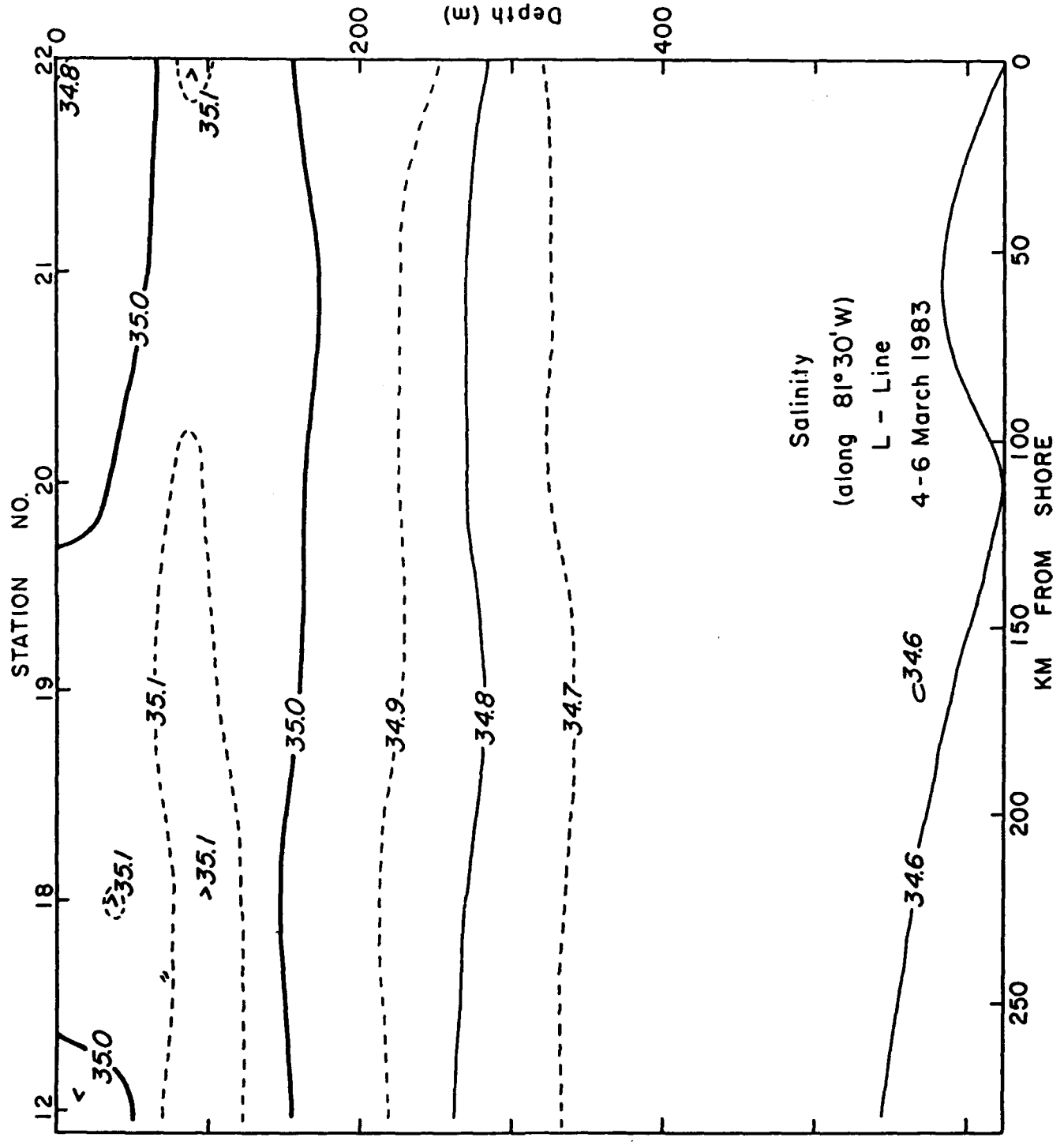

Temperature (°C)
(along 85°W)
A-Line
10-11 March 1983
Depth (m)
0
200
400
600
STATION NO.
45
46
47
48
KM FROM SHORE
0
50
100
150
200
250
300
29
28
26
25
24
20
19
18
17
16
15
14
13
12
11
10
9
8
7

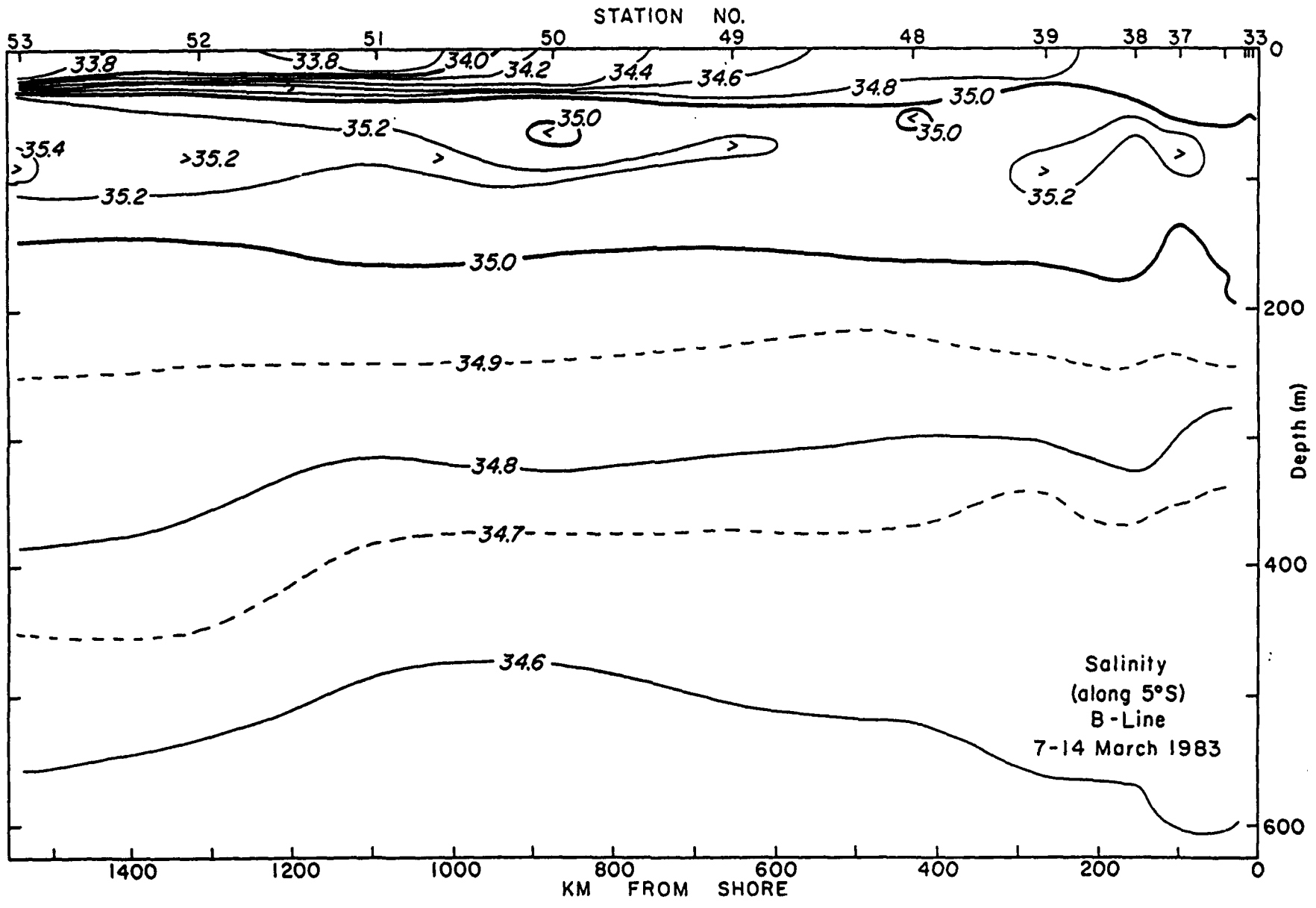

Depth (m)
0
200
400
600
800
2°00'N
0°00'
5°00'S
STATION NO.
62
61
60
59
58
57
56
55
54
53
0
200
400
600
800
KM FROM SHORE
Temperature (°C)
(along 95°W)
G-Line
14-16 March 1983
>29
29
28
27
26
25
24
22
18
16
15
14
13
12
11
10
9
8
7

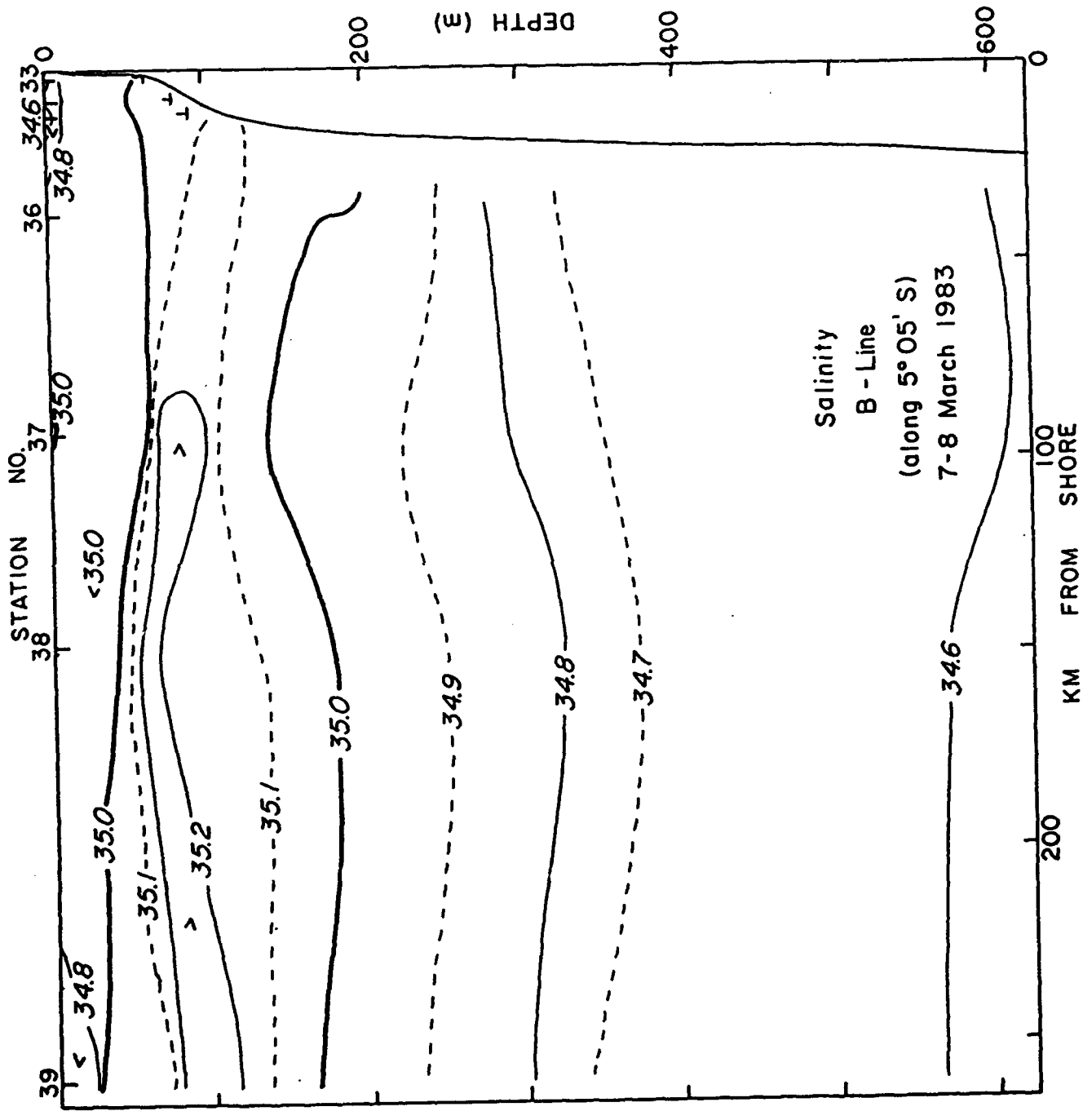

Temperature (°C)
(along 92°W)
I - Line
17-19 March 1983
Depth (m)
0
200
400
600
2°00'N
0°00'
2°00'S
STATION NO.
63
64
65
66
67
70
29
28
26
24
20
18
16
14
13
12
11
10
9
8
7
100
200
300
400
KM FROM STATION 63

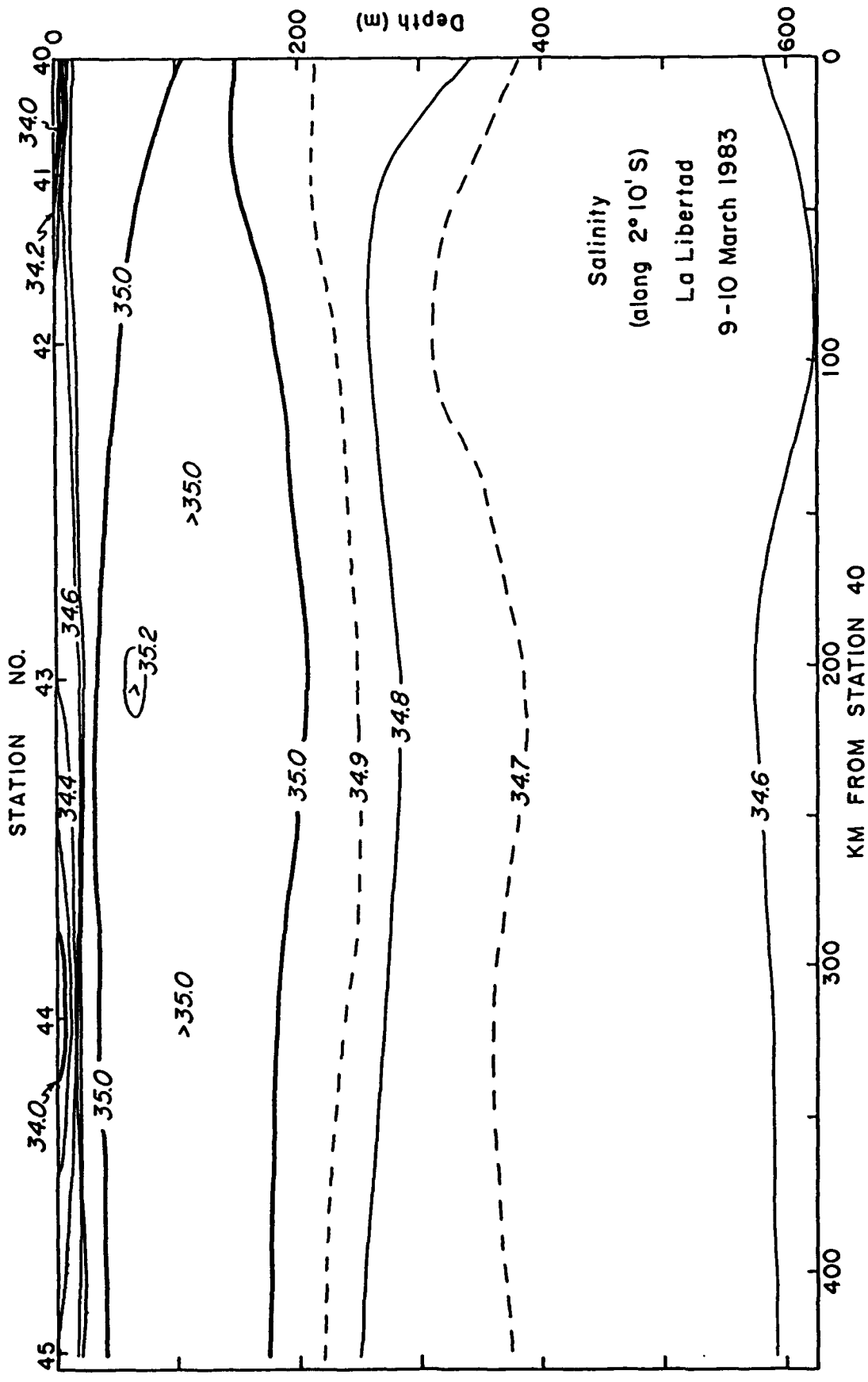

STATION NO.
1
3
5
7
9
11
DEPTH (m)
0
200
400
600
Salinity
D Line
Chimbote
2-3 March 1983
KM FROM SHORE
0
50
100
150
200
<35.2
>35.2
35.0
34.9
34.8
34.7
34.6

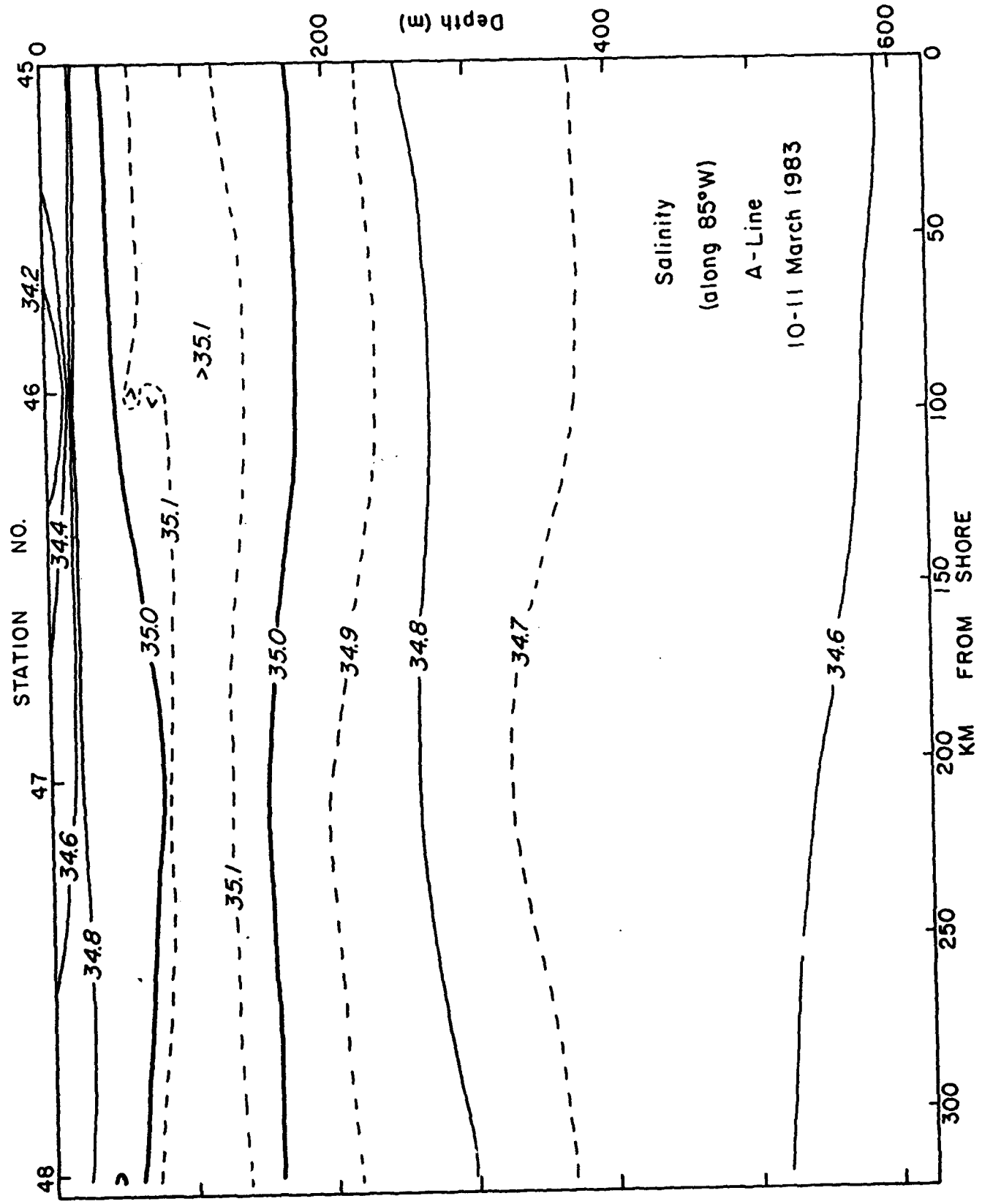

STATION NO.
12
13
14
15
16
17
DEPTH (m)
0
200
400
600
0
50
100
150
KM FROM SHORE
Salinity
C Line
Lobos de Afuera
4-5 March 1983
<35.0
35.1
>35.1
35.1
35.0
34.9
34.8
34.7
34.6
>35.0
35.1
35.0

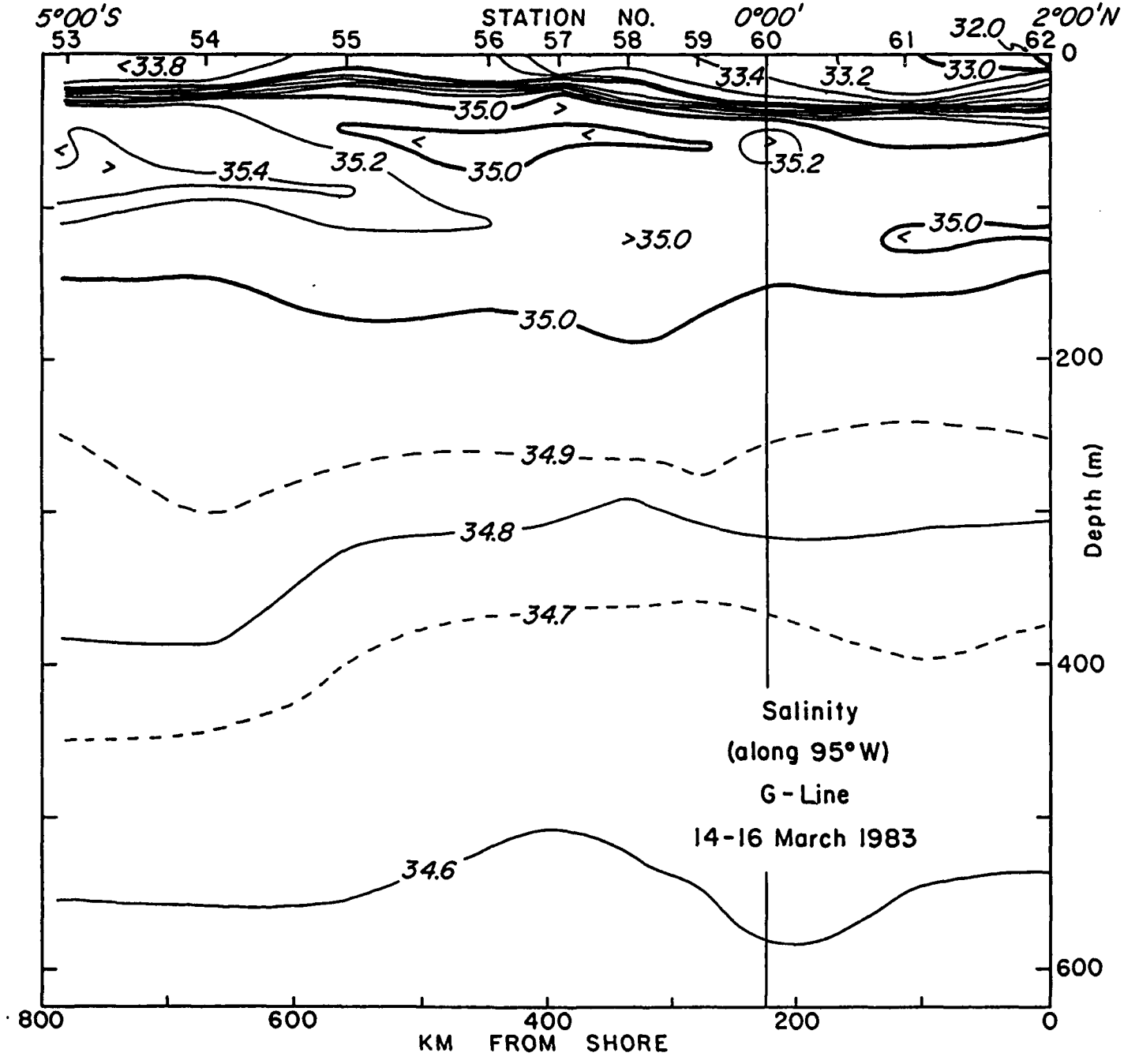

Depth (m)
0
200
400
STATION NO.
22
21
20
19
18
12
0
50
100
150
200
250
KM FROM SHORE
Salinity
(along 81°30'W)
L - Line
4-6 March 1983
34.8
35.0
35.1
35.1
35.0
34.9
34.8
34.7
<34.6
34.6
<35.1
>35.1
<35.0

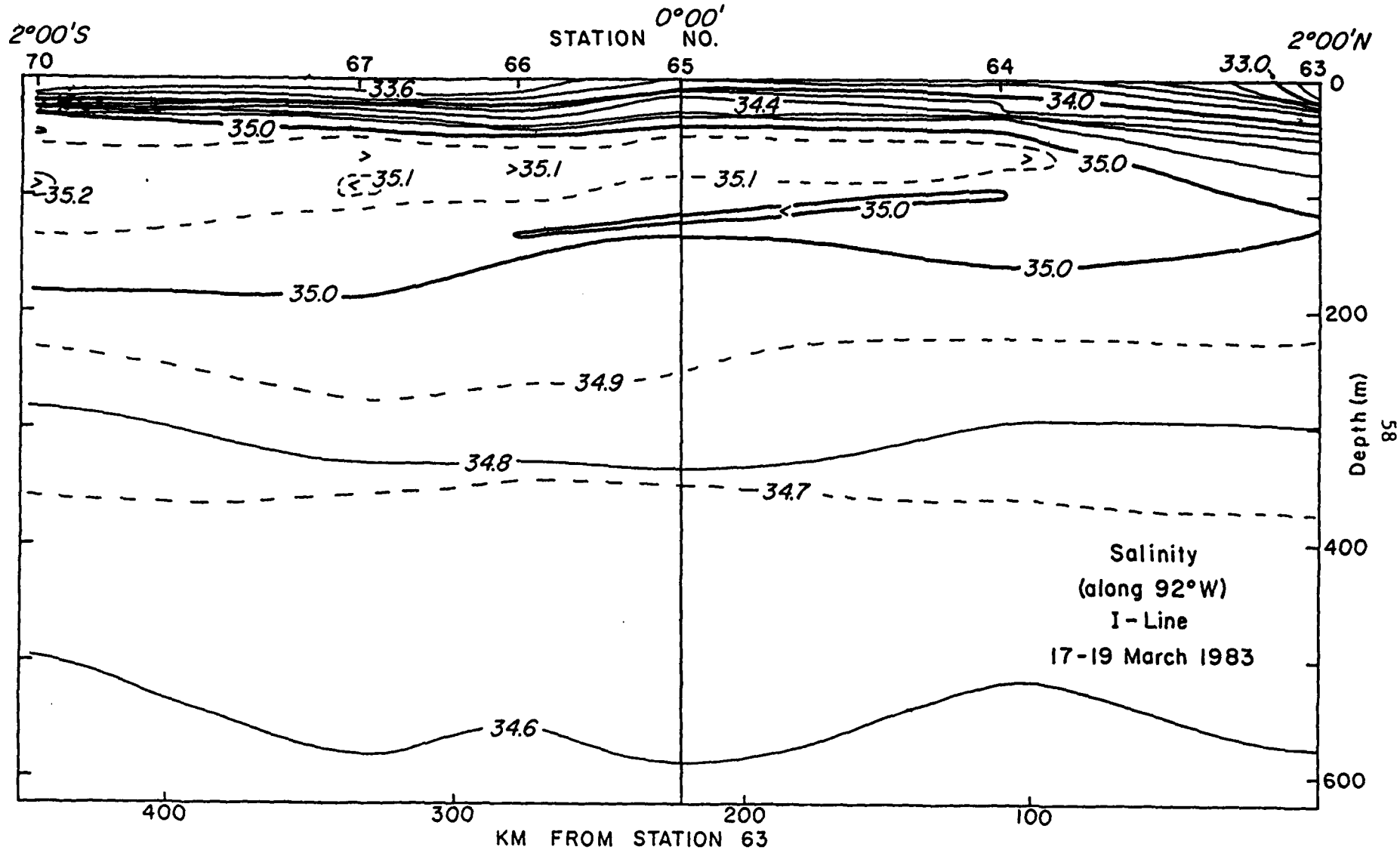

STATION NO.
53
52
51
50
49
48
39
38
37
33
0
33.8
33.8
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.0
35.0
35.4
>35.2
35.2
35.2
35.0
34.9
34.8
34.7
34.6
200
400
600
Depth (m)
Salinity
(along 5°S)
B-Line
7-14 March 1983
1400
1200
1000
800
600
400
200
0
KM FROM SHORE

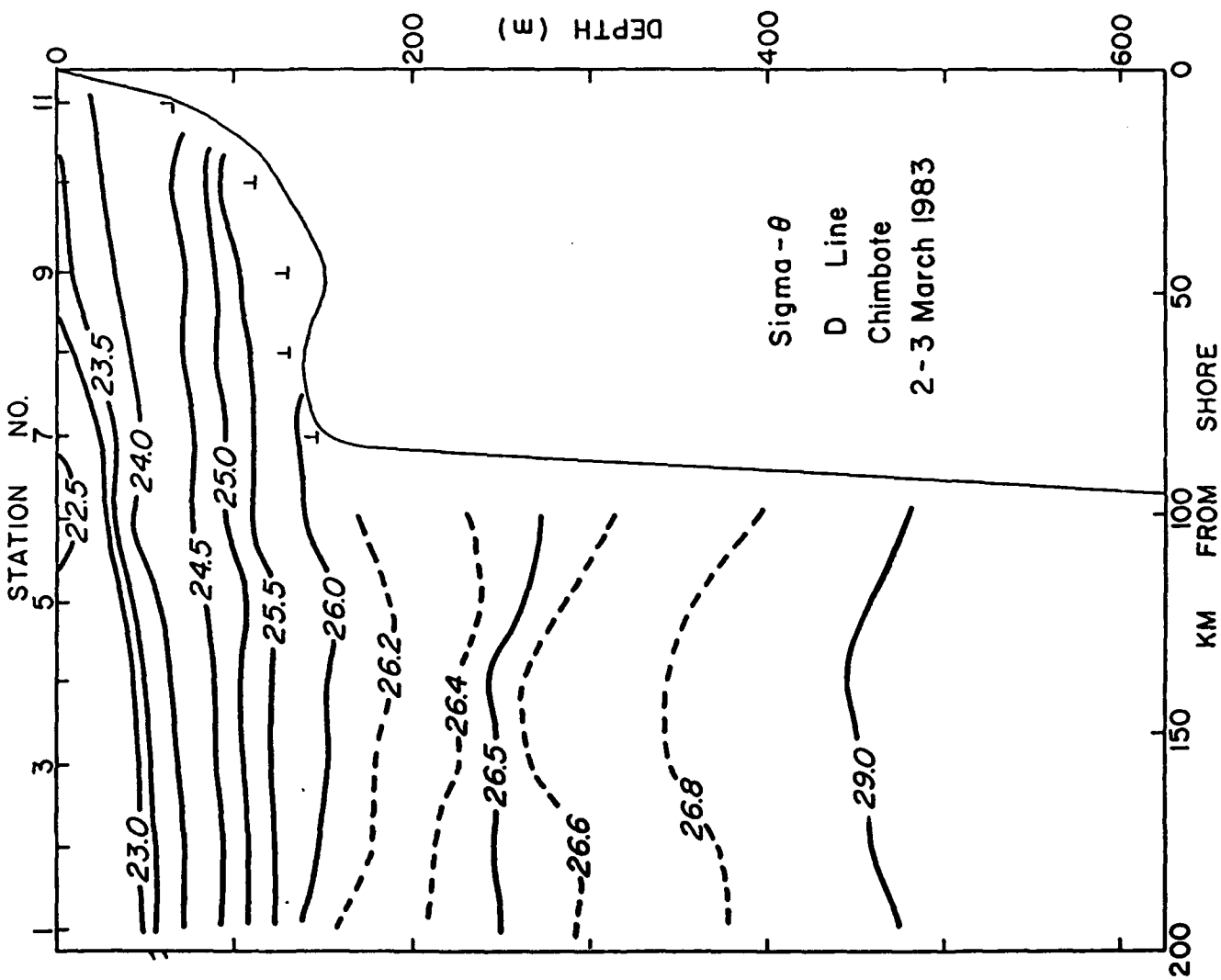

DEPTH (m)
0
200
400
600
STATION NO.
33
34
36
37
38
39
34.6
34.8
35.0
<35.0
35.0
35.1
35.2
35.1
35.0
34.9
34.8
34.7
34.6
Salinity
B - Line
(along 5° 05' S)
7-8 March 1983
0
100
200
KM FROM SHORE

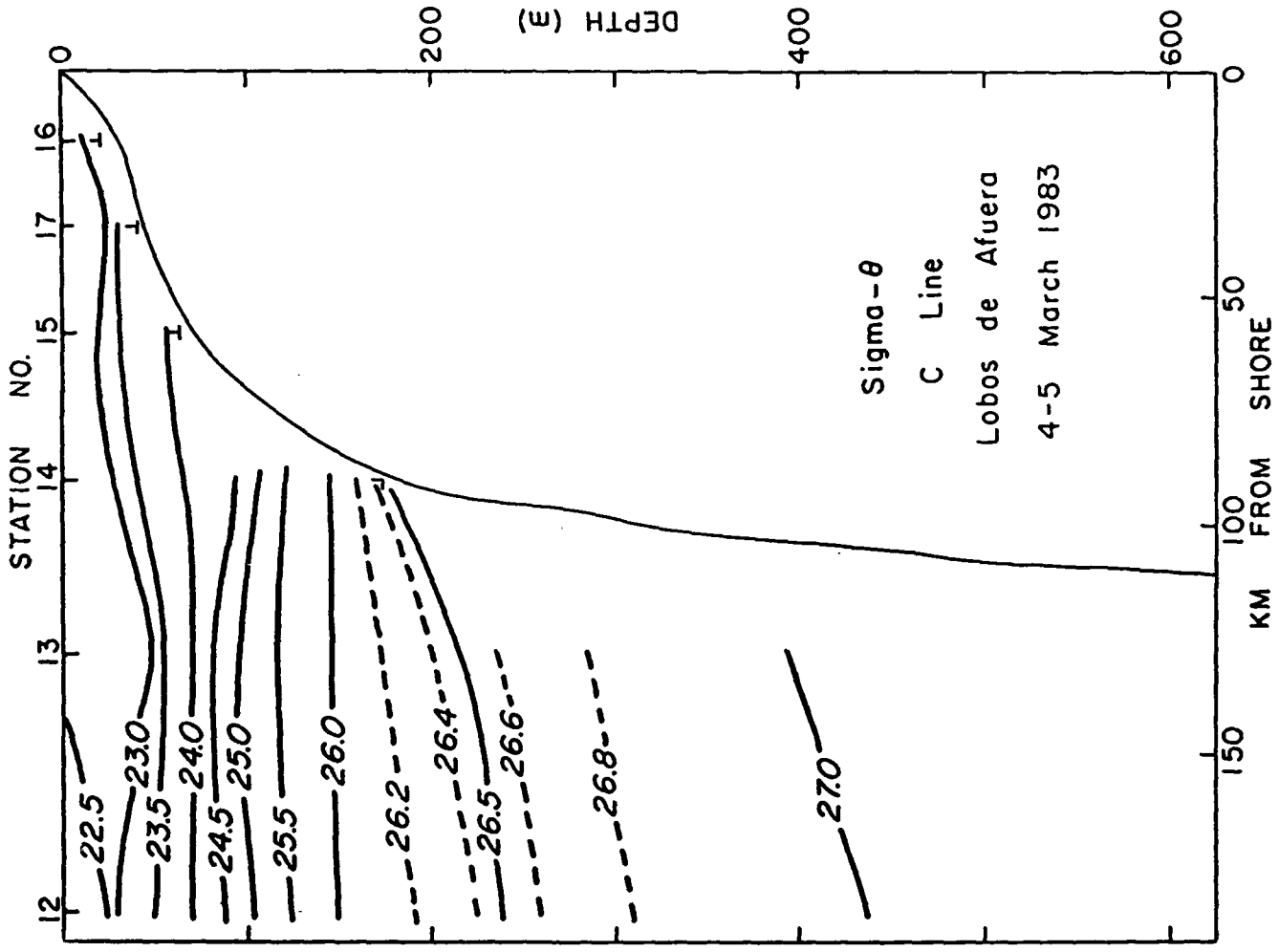

Salinity
(along 2°10' S)
La Libertad
9-10 March 1983
Depth (m)
0
200
400
600
KM FROM STATION 40
0
100
200
300
400
STATION NO.
40
41
42
43
44
45
34.0
34.2
34.4
34.6
35.0
35.2
>35.0
>35.0
35.0
34.9
34.8
34.7
34.6

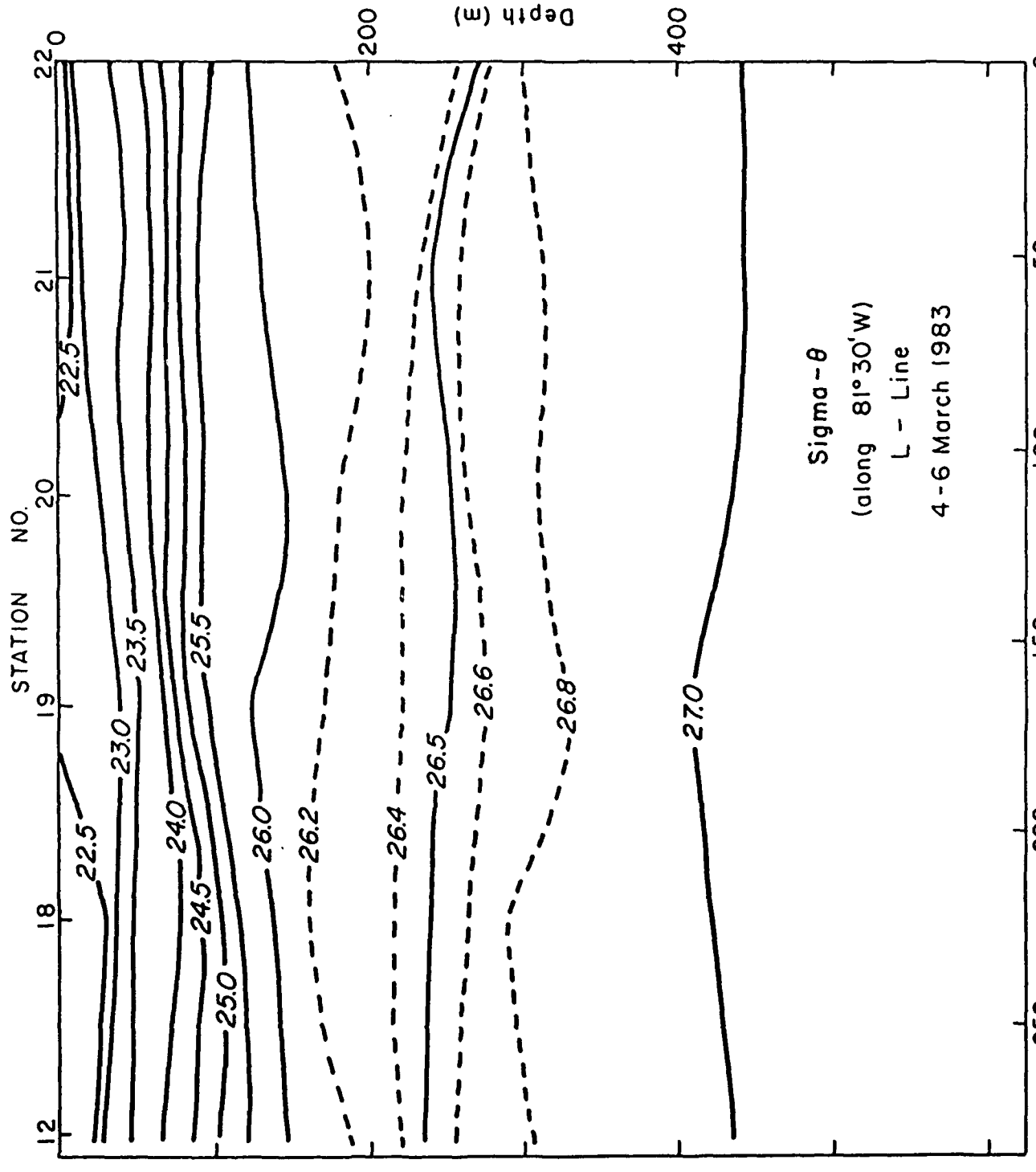

Depth (m)
0
200
400
600
STATION NO.
45
46
47
48
34.2
34.4
34.6
34.8
35.0
35.1
>35.1
35.1
35.0
34.9
34.8
34.7
34.6
Salinity
(along 85°W)
A-Line
10-11 March 1983
0
50
100
150
200
250
300
KM FROM SHORE

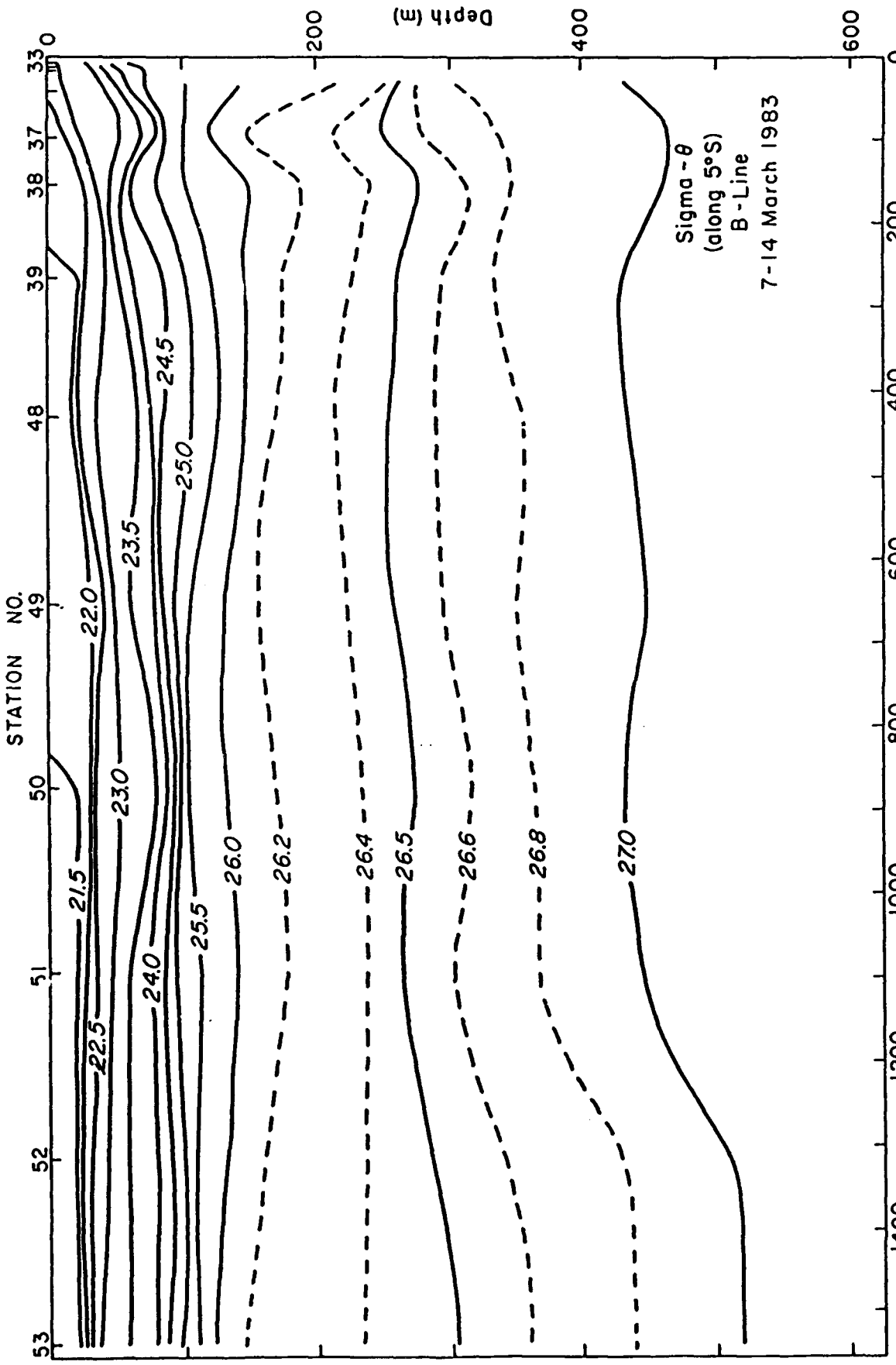

5°00'S
STATION NO.
0°00'
2°00'N
53
54
55
56
57
58
59
60
61
62
<33.8
33.4
33.2
33.0
32.0
35.0
35.4
35.2
>35.0
34.9
34.8
34.7
34.6
0
200
400
600
Depth (m)
800
600
400
200
0
KM FROM SHORE
Salinity
(along 95°W)
G-Line
14-16 March 1983

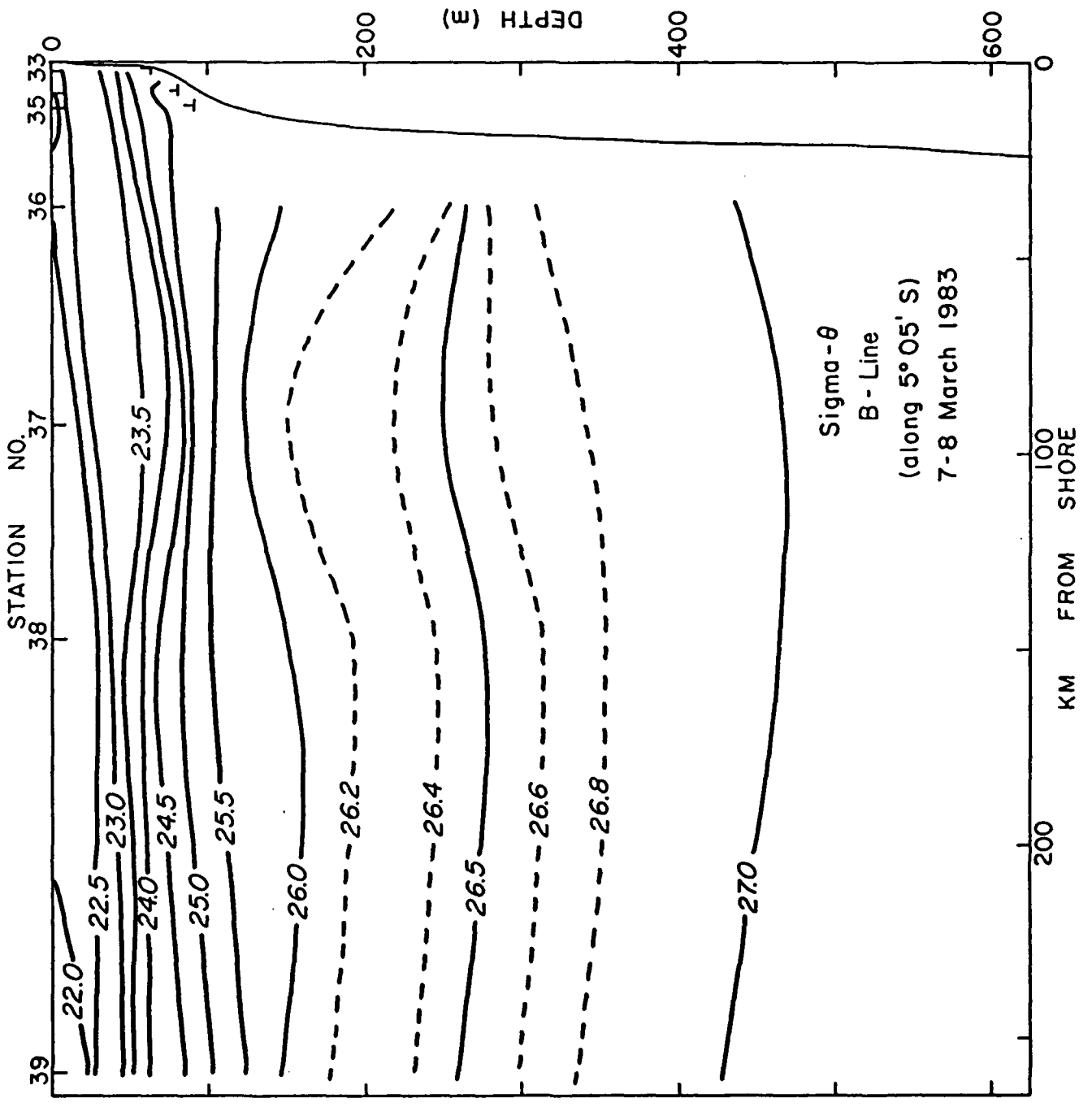

2°00'S
0°00'
2°00'N
STATION NO.
70
67
66
65
64
63
33.0
0
33.6
34.4
34.0
35.0
35.1
>35.1
35.2
35.0
35.0
35.0
35.0
200
34.9
34.8
34.7
400
Salinity
(along 92°W)
I - Line
17 - 19 March 1983
34.6
600
Depth (m)
400
300
200
100
KM FROM STATION 63

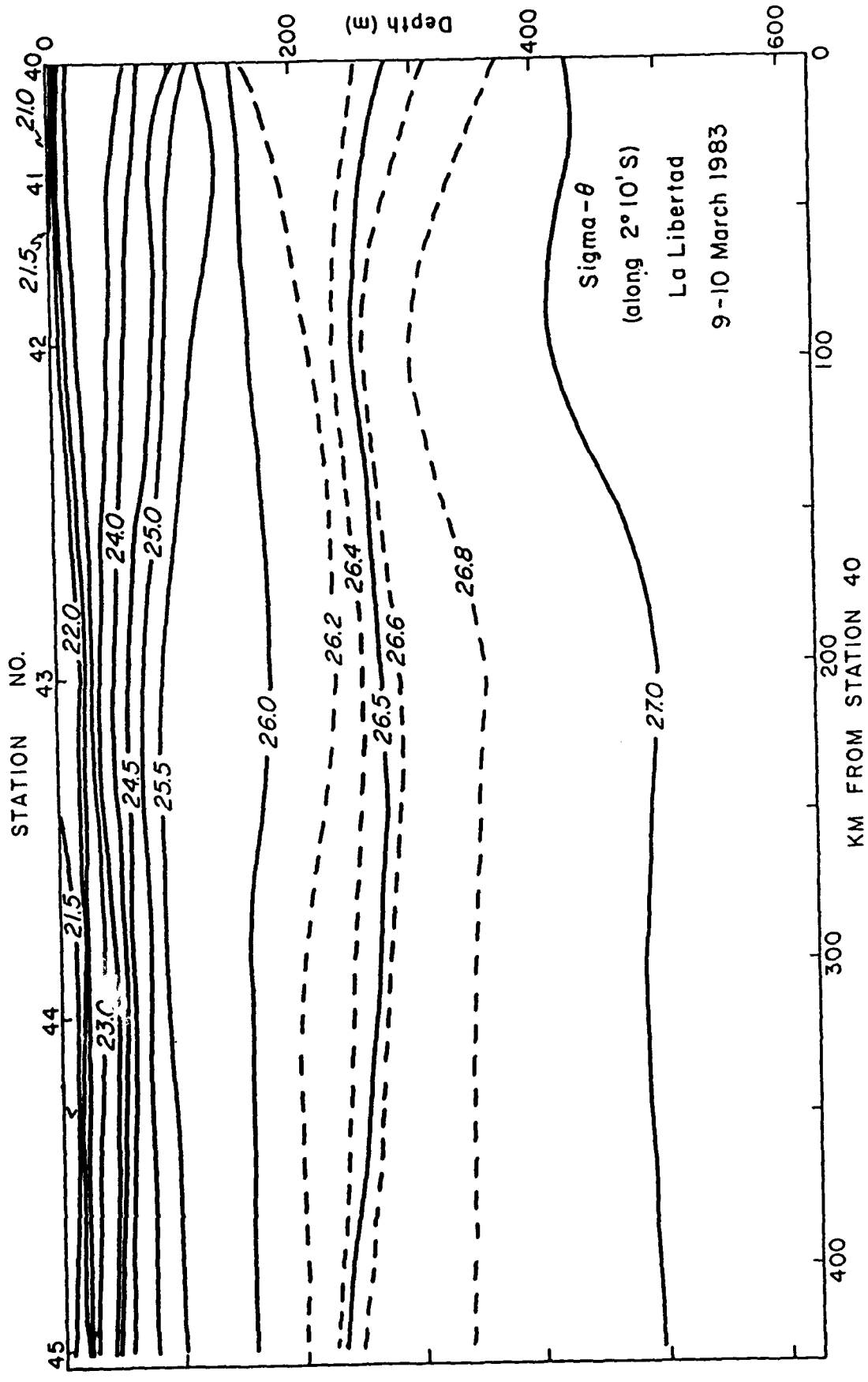

DEPTH (m)
0
200
400
600
STATION NO.
1
3
5
7
9
11
KM FROM SHORE
0
50
100
150
200
Sigma-θ
D Line
Chimbote
2-3 March 1983
22.5
23.0
23.5
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
29.0

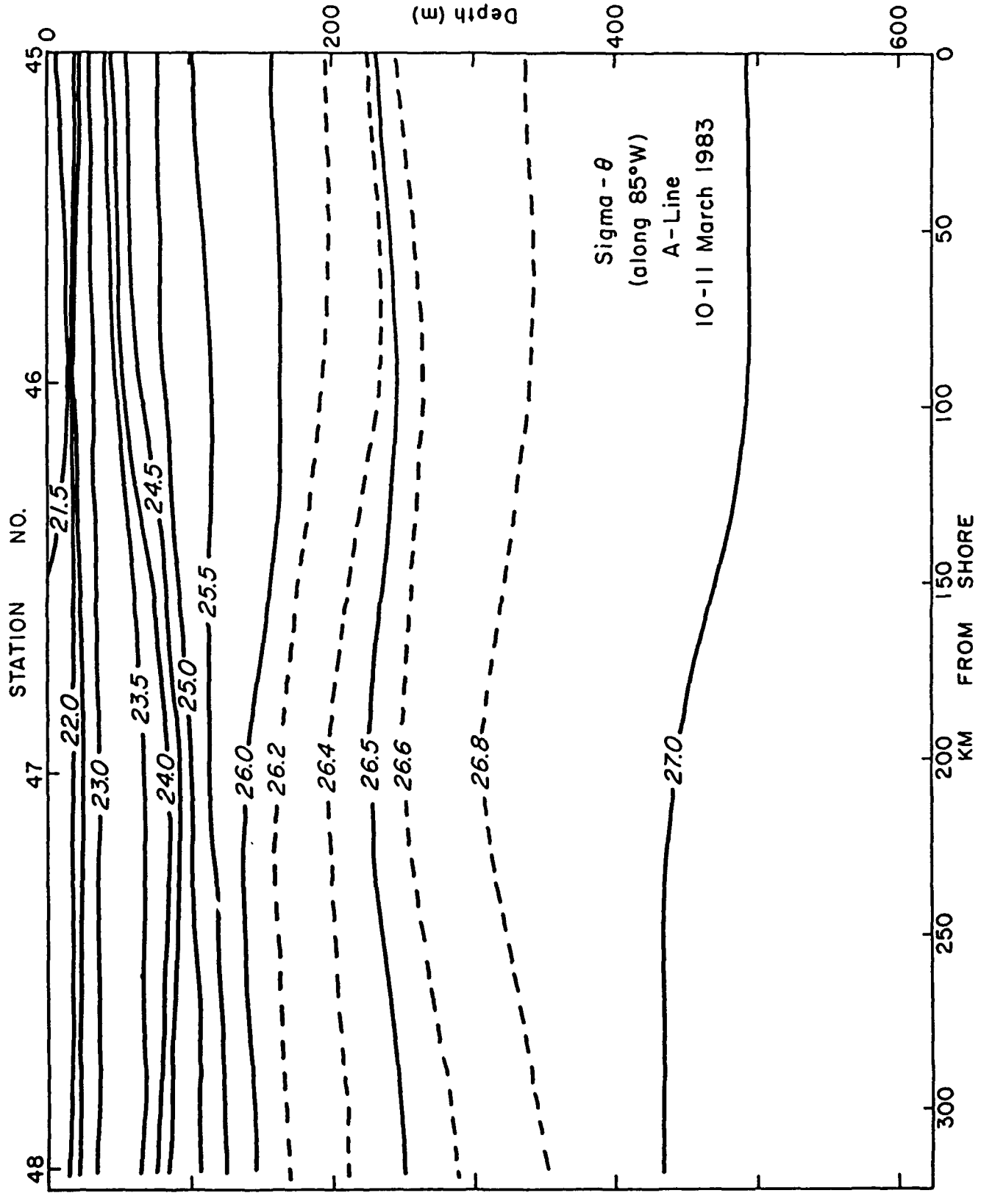

DEPTH (m)
0
200
400
600
STATION NO.
12
13
14
15
16
17
0
50
100
150
KM FROM SHORE
Sigma-θ
C Line
Lobos de Afuera
4-5 March 1983
22.5
23.0
23.5
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0

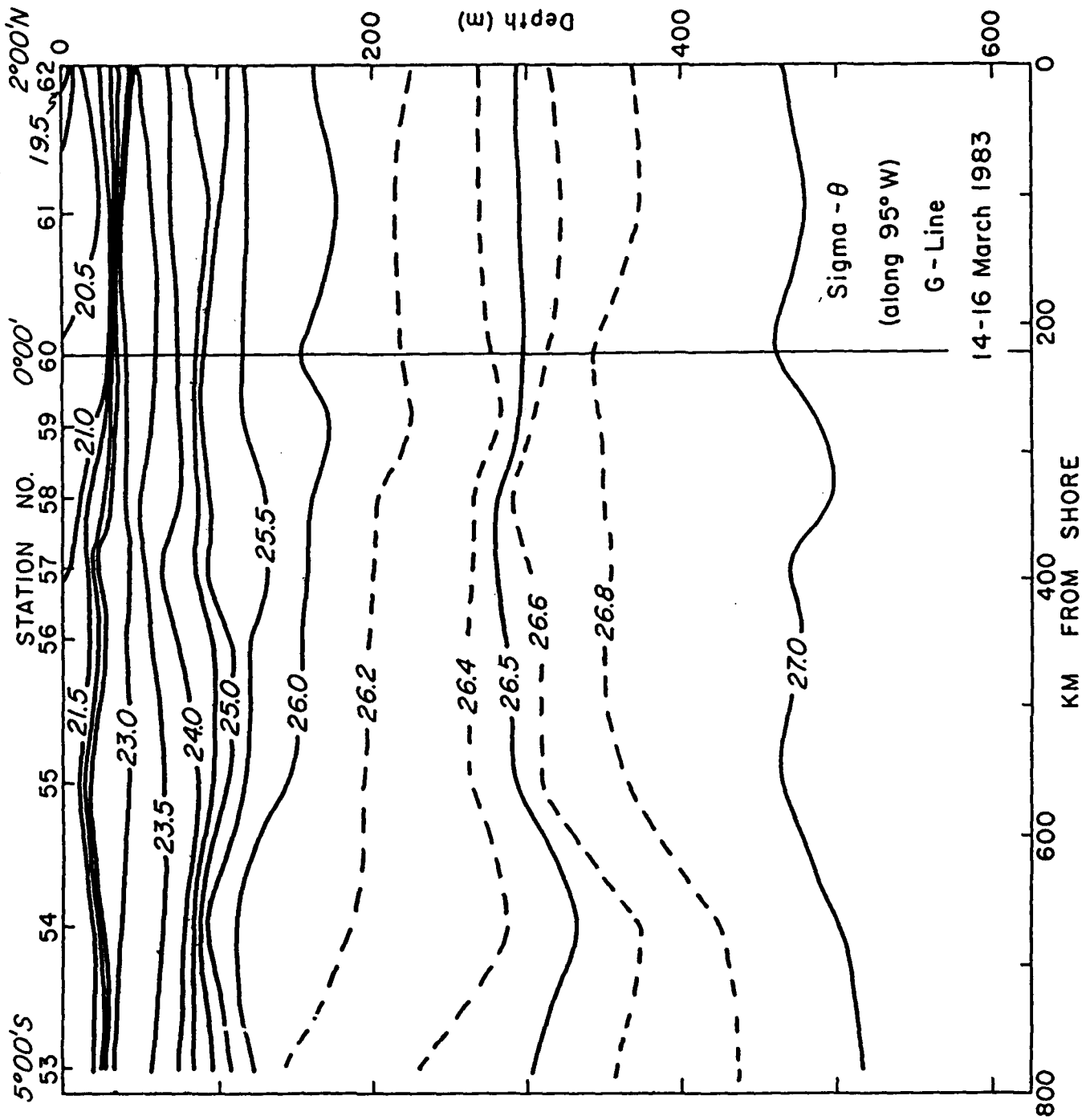

Depth (m)
0
200
400
STATION NO.
22
21
20
19
18
12
0
50
100
150
200
250
KM FROM SHORE
22.5
23.0
23.5
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
Sigma-θ
(along 81°30'W)
L - Line
4-6 March 1983

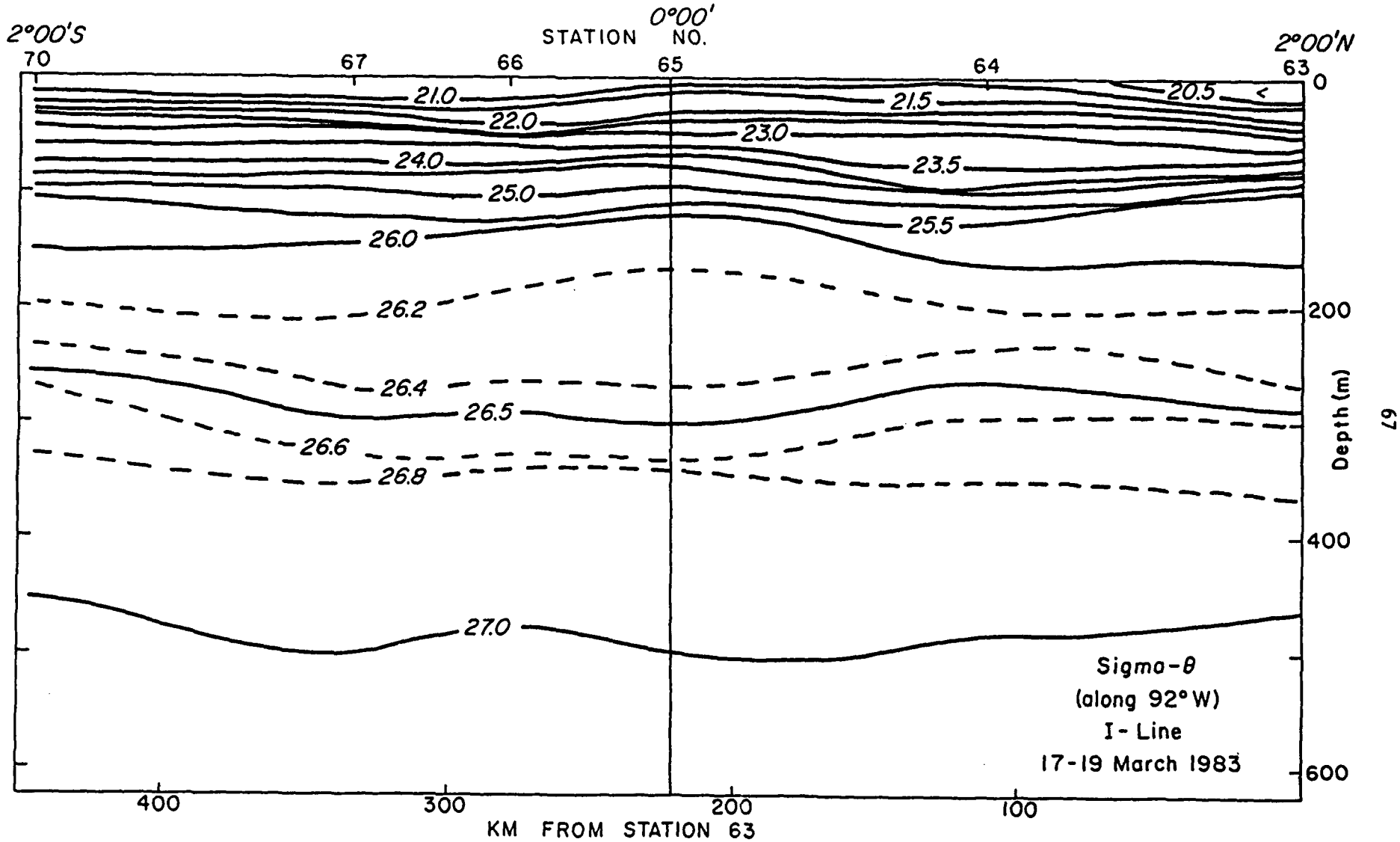

Depth (m)
0
200
400
600
STATION NO.
33
37
38
39
48
49
50
51
52
53
21.5
22.0
22.5
23.0
23.5
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
Sigma-θ
(along 5°S)
B-Line
7-14 March 1983
0
200
400
600
800
1000
1200
1400
KM FROM SHORE


DEPTH (m)
0
200
400
600
STATION NO.
33
35
36
37
38
39
T
22.0
22.5
23.0
23.5
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
Sigma-θ
B - Line
(along 5°05' S)
7-8 March 1983
0
100
200
KM FROM SHORE


Depth (m)
0
200
400
600
STATION NO.
40
41
42
43
44
45
0
100
200
300
400
KM FROM STATION 40
Sigma-θ
(along 2° 10' S)
La Libertad
9-10 March 1983
21.0
21.5
22.0
21.5
23.0
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0


Depth (m)
0
200
400
600
STATION NO.
45
46
47
48
0
50
100
150
200
250
300
KM FROM SHORE
Sigma - θ
(along 85°W)
A-Line
10-11 March 1983
21.5
22.0
23.0
23.5
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0


Depth (m)
0
200
400
600
800
2°00'N
0°00'
5°00'S
19.5
62
61
60
59
58
57
56
55
54
53
STATION NO.
0
200
400
600
KM FROM SHORE
20.5
21.0
21.5
23.0
23.5
24.0
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
Sigma - θ
(along 95° W)
G - Line
14-16 March 1983


2°00'S
0°00'
2°00'N
STATION NO.
70
67
66
65
64
63
0
21.0
22.0
24.0
25.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0
21.5
23.0
23.5
25.5
20.5 <
200
400
600
Depth (m)
400
300
200
100
KM FROM STATION 63
Sigma-θ
(along 92° W)
I - Line
17-19 March 1983

EN109

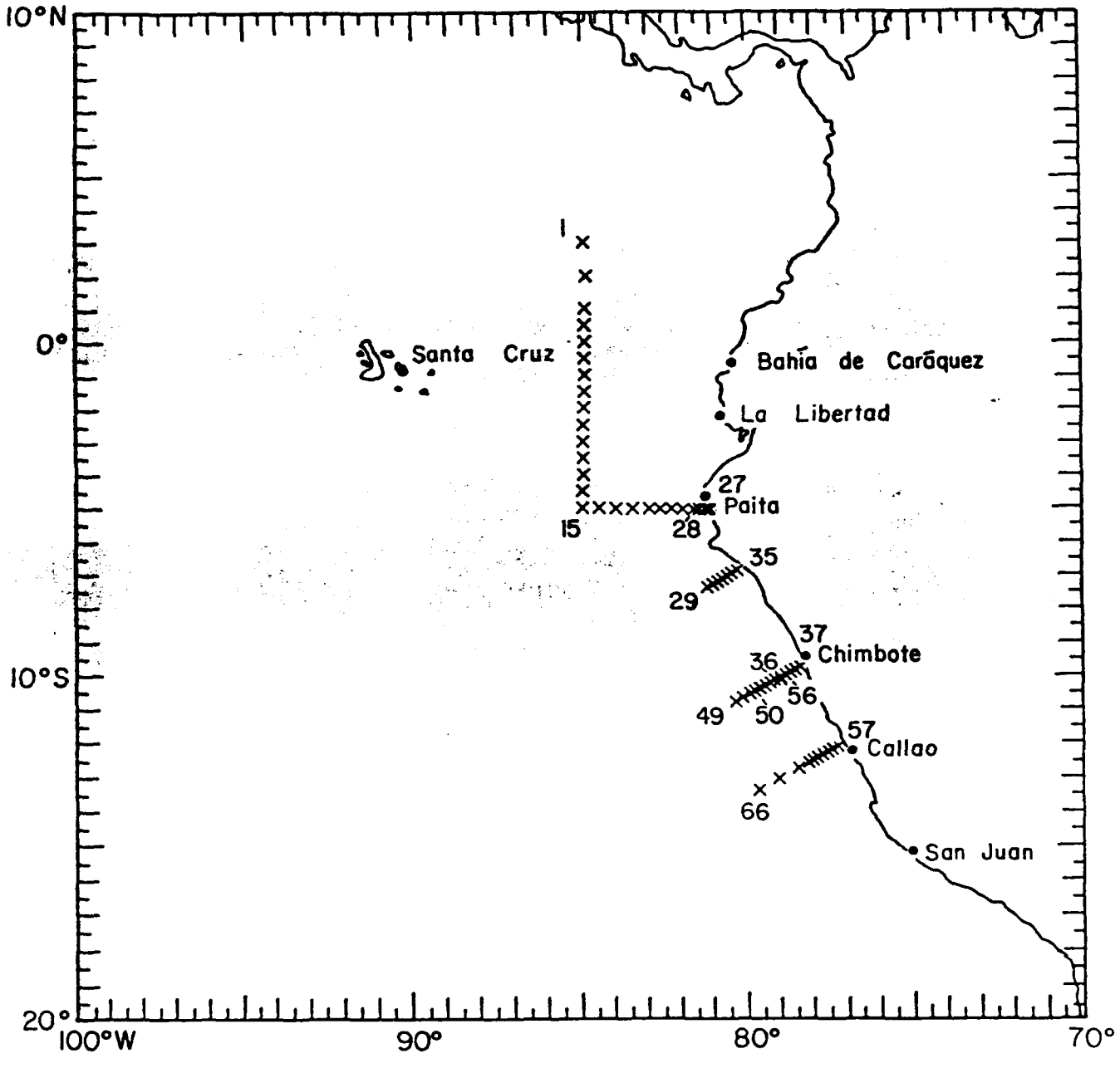


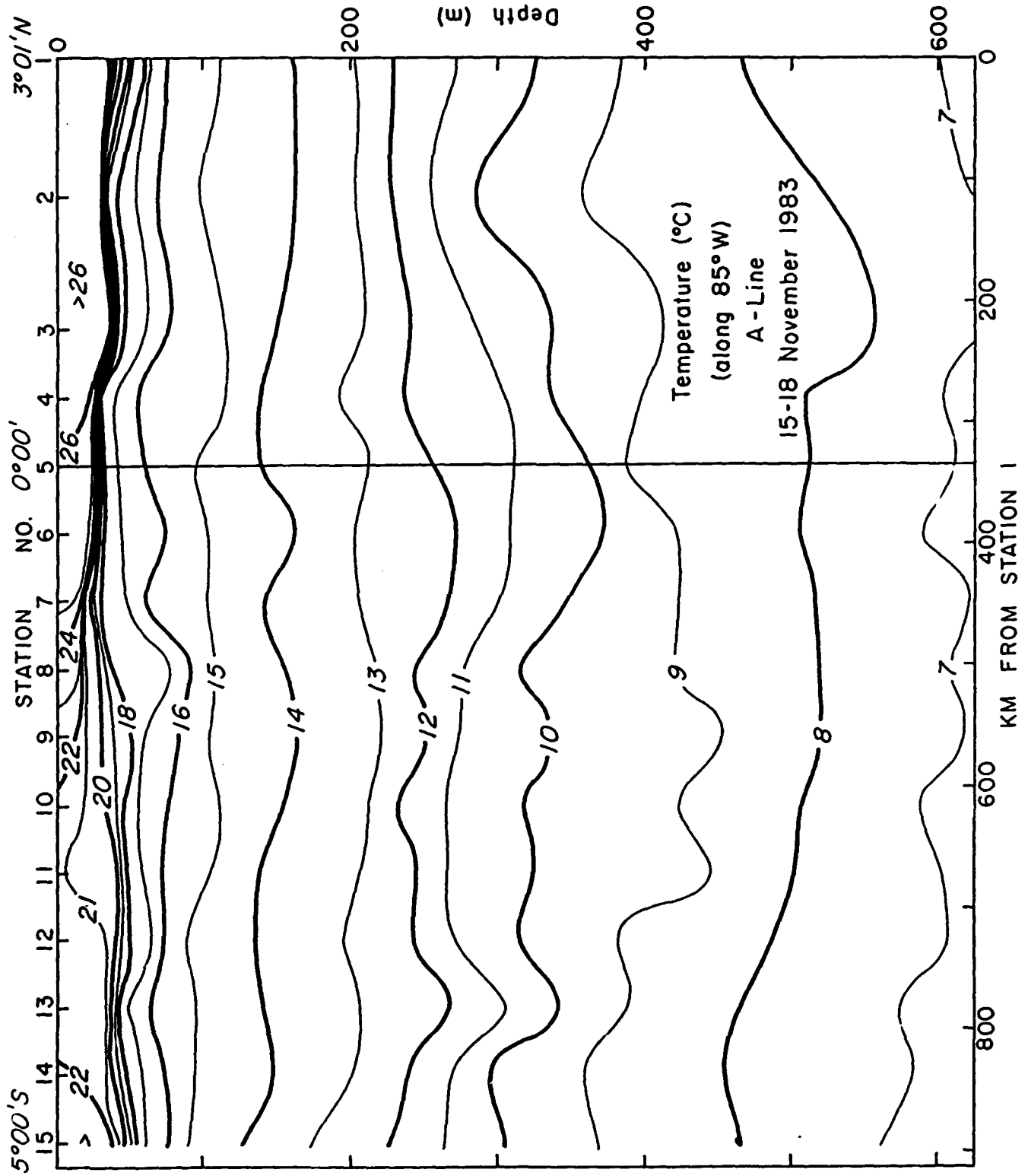
Figure 3. Location of CTD stations during EN109, 15-28 November 1983.

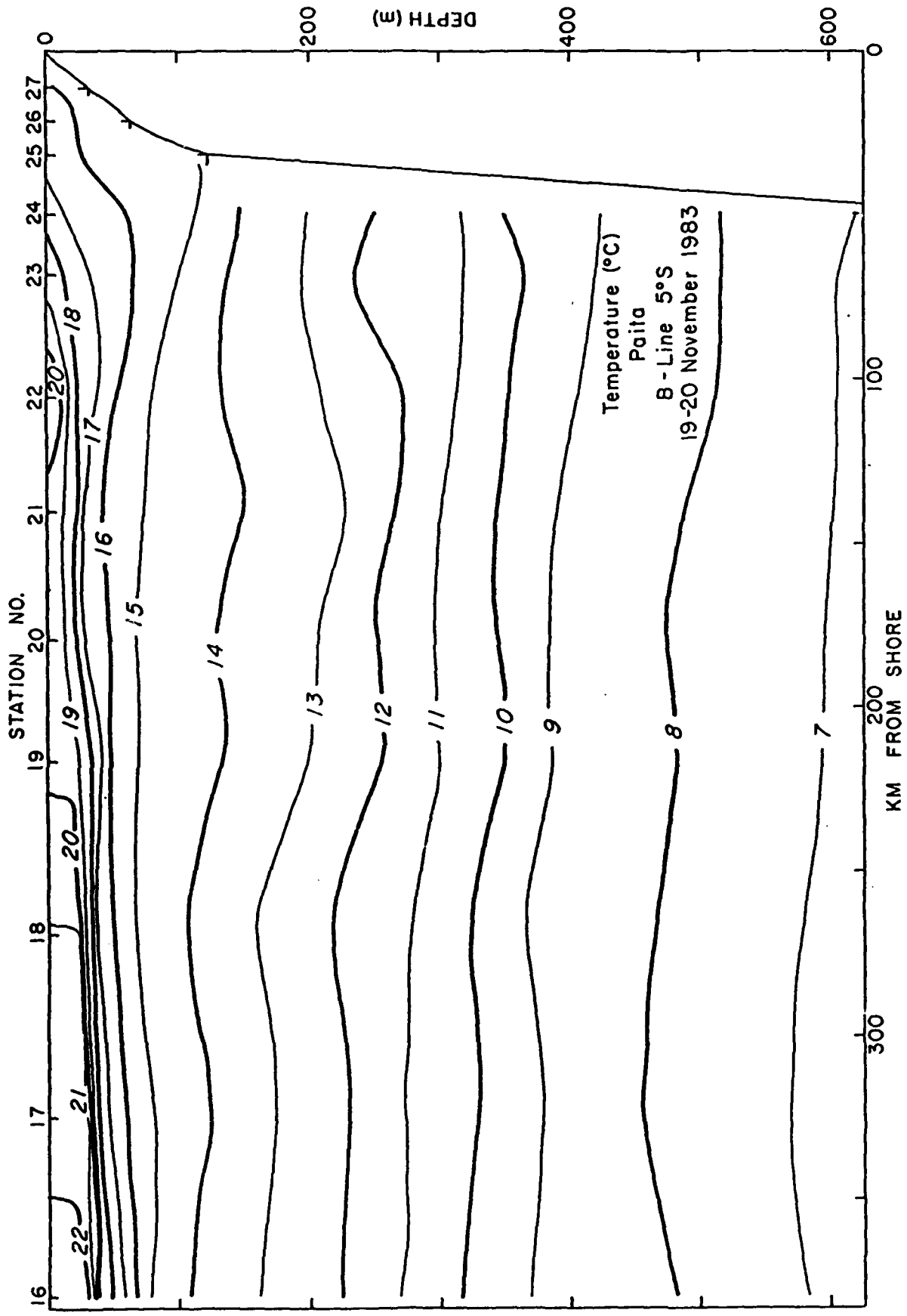
Table 4. List of stations occupied during EN109 showing date, time, location, wind speed and direction and atmospheric pressure.

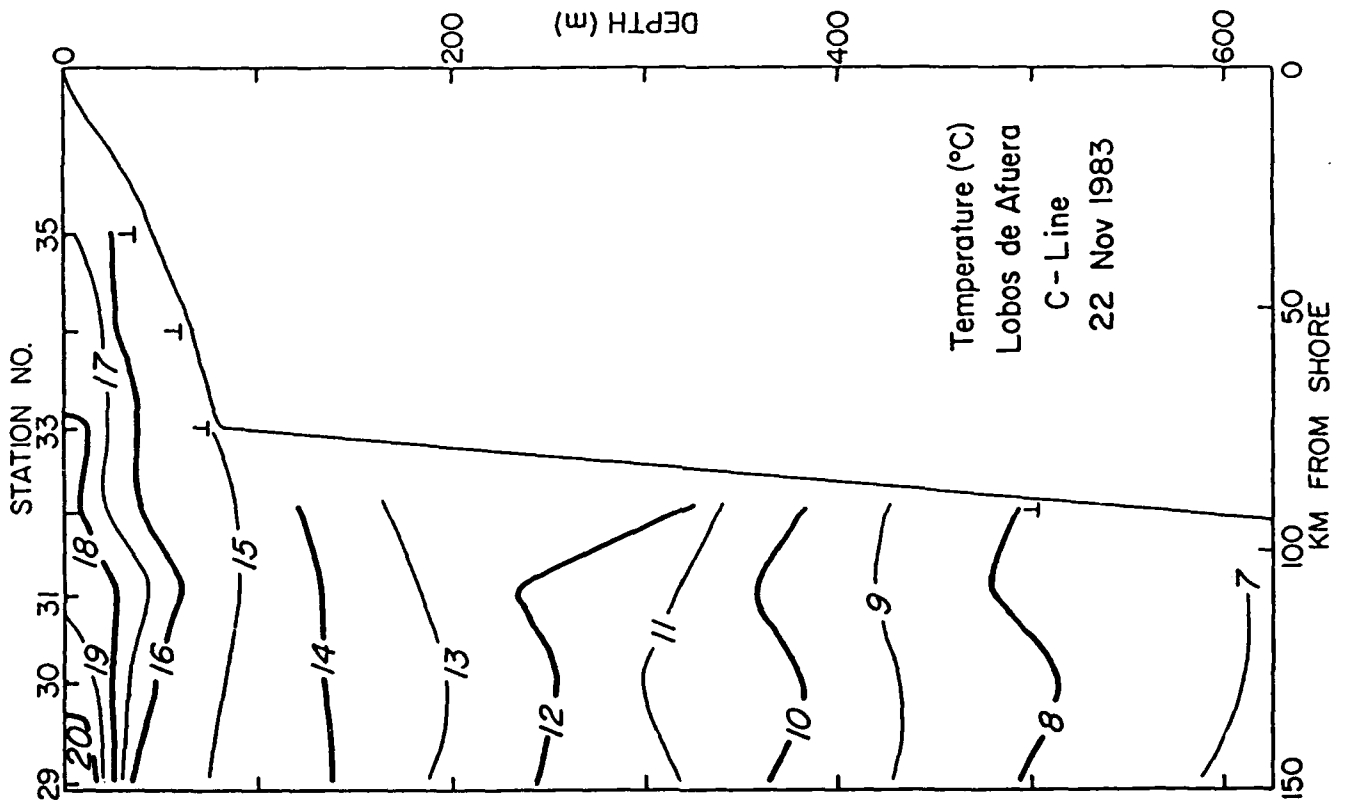
Date		Time	Station No.	Name	Location Lat.	Long.	Wind Dir. (°T)	Spd. (kts)	Pressure (mb)
Nov.	15	1111	1	A-1	3°00.9'N	85°04.2'W	160	21	1014.0
	15	2048	2	A-3	1°59.8'N	85°00.1'	181	19	1012.0
Nov.	16	0348	3	A-5	1°01.0'N	85°00.8'	180	12	1015.5
	16	0803	4	A-6	0°30.5'N	85°01.3'	185	15	1013.2
	16	1211	5	A-7	0°00.0'	85°00.8'	175	19	1015.0
	16	1606	6	A-8	0°29.7'S	84°59.9'	170	17	1015.0
	16	1954	7	A-9	0°59.4'S	84°58.9'	200	15	1013.0
	16	2342	8	A-10	1°30.1'S	85°00.1'	180	10	1014.0
Nov.	17	0454	9	A-11	1°59.0'S	85°00.7'	160	11	1016.0
	17	1132	10	A-12	2°30.2'S	85°00.6'	150	8	1016.0
	17	1503	11	A-13	3°00.2'S	85°00.5'	170	8	1017.0
	17	1839	12	A-14	3°29.9'S	85°00.3'	180	10	1015.0
	17	2211	13	A-15	3°59.9'S	84°59.8'	160	12	1013.1
Nov.	18	0143	14	A-16	4°29.8'S	85°00.4'	150	15	1015.0
	18	0506	15	A-17	5°00.0'S	85°00.1'	135	15	1016.0
	19	0144	16	B-1	4°59.9'S	84°30.1'	160	18	1014.0
	19	0525	17	B-2	5°00.1'S	83°59.9'	165	16	1013.0
	19	0916	18	B-3	5°00.1'S	83°30.3'	155	14	1012.2
	19	1241	19	B-4	5°00.2'S	83°00.0'	160	8	1015.0
	19	1525	20	B-5	5°00.0'S	82°40.0'	160	4	1010.0
	19	1812	21	B-6	4°59.9'S	82°19.8'	180	7	1012.0
	19	2112	22	B-7	5°00.2'S	81°59.8'	180	9	1010.0
Nov.	20	0012	23	B-8	5°00.6'S	81°39.9'	180	10	1014.0
	20	0209	24	B-9	4°59.7'S	81°30.8'	160	10	1013.0
	20	0505	25	B-10	4°59.9'S	81°20.2'	170	8	1014.0
	20	0624	26	B-11	4°59.9'S	81°15.0'	90	5	1012.5
	20	1740	27	B-12	5°00.1'S	81°10.2'	160	5	1012.0
	20	2116	28	B-9	4°59.7'S	81°31.2'	180	15	1011.0
Nov.	22	0325	29	C-8	7°20.0'S	81°13.2'	160	8	1015.0
	22	0535	30	C-7	7°15.1'S	81°04.0'	160	9	1015.0
	22	0814	31	C-6	7°10.0'S	80°54.8'	140	6	1014.0
	22	1024	32	C-5	7°05.6'S	80°46.4'	120	5	1014.0
	22	1219	33	C-4	7°00.1'S	80°38.0'	120	3	1015.0
	22	1353	34	C-3	6°55.0'S	80°29.8'	140	5	1016.0
	22	1526	35	C-2	6°49.9'S	80°20.1'	180	7	1016.0
Nov.	23	1109	36		10°03.9'S	78°59.0'	125	9	1016.0
Nov.	24	0009	37	D-1	9°40.0'S	78°24.0'	125	9	1014.0
	24	0147	38	D-2	9°45.8'S	78°33.0'	140	9	1015.0
	24	0314	39	D-3	9°49.9'S	78°41.9'	130	8	1016.0
	24	0457	40	D-4	9°54.9'S	78°51.0'	140	9	1015.0
	24	0645	41	D-5	10°00.0'S	79°00.1'	110	7	1014.5
	24	0834	42	D-6	10°00.0'S	79°10.2'	140	9	1013.5
	24	1029	43	D-7	10°09.8'S	79°18.4'	145	9	1014.0
	24	1252	44	D-8	10°15.2'S	79°27.0'	120	10	1016.0
	24	1537	45	D-9	10°19.8'S	79°37.3'	145	6	1016.0
	24	1904	46	D-10	10°25.1'S	79°45.2'	145	10	1013.5
	24	2210	47	D-11	10°30.1'S	79°53.9'	145	8	1014.0

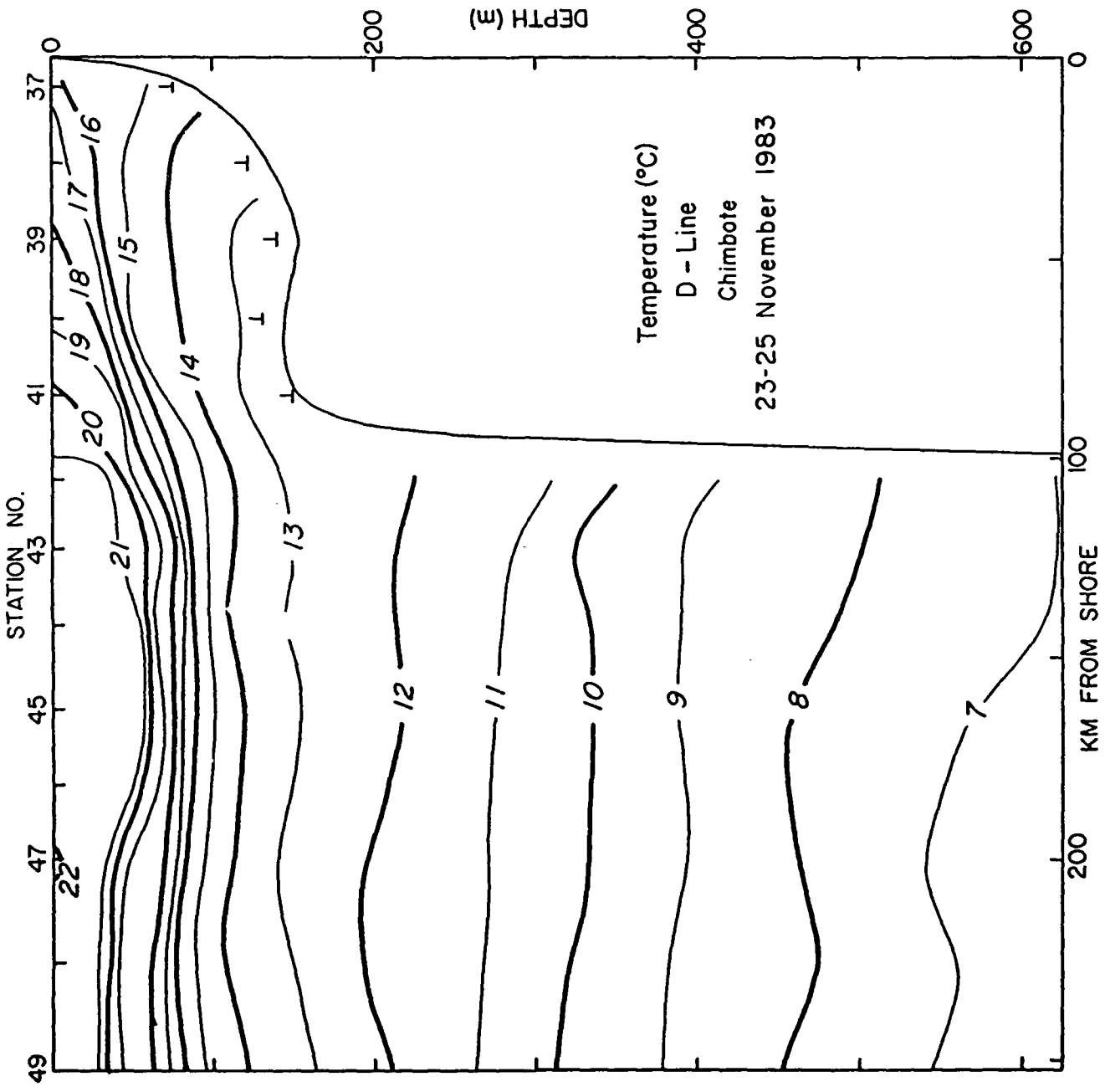
Table 4 cont'd.

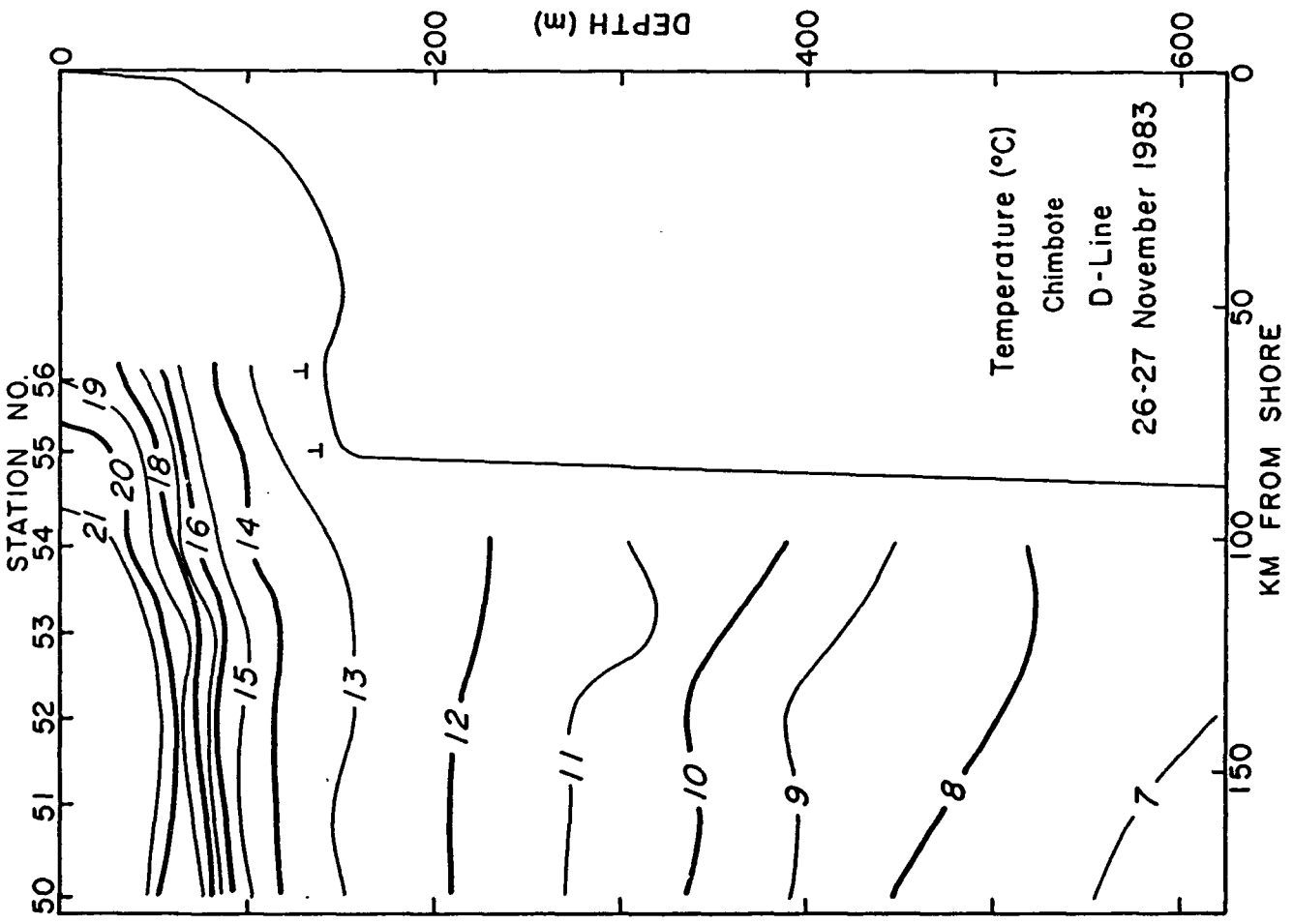
Date	Time	Station No.	Name	Location Lat.	Long.	Wind Dir. (°T)	Wind Snd. (kts)	Pressure (mb)
Nov. 25	0041	48	D-11a	10°37.5'S	80°06.9'W	140	11	1016.0
25	0324	49	D-12	10°44.9'S	80°20.1'	140	9	1017.0
Nov. 26	1732	50	D-10	10°25.2'S	79°45.2'	160	18	1016.3
26	1959	51	D-9	10°19.8'S	79°35.2'	160	17	1014.5
26	2201	52	D-8	10°15.2'S	79°26.5'	150	12	1015.0
Nov. 27	0023	53	D-7	10°09.7'S	79°17.7'	145	16	1015.0
27	0223	54	D-6	10°05.0'S	79°10.0'	180	17	1015.0
27	0420	55	D-5	9°59.9'S	78°59.8'	165	15	1016.0
27	0545	56	D-4	9°55.0'S	78°50.9'	160	11	1015.0
27	2014	57	E-1	12°00.3'S	77°14.0'	160	15	1013.0
27	2309	58	E-2	12°04.9'S	77°24.4'	135	5	1013.0
Nov. 28	0025	59	E-3	12°09.9'S	77°32.0'	160	12	1014.0
28	0151	60	E-4	12°15.4'S	77°41.3'	160	15	1014.0
28	0334	61	E-5	12°20.5'S	77°50.2'	150	15	1015.0
28	0555	62	E-6	12°25.1'S	77°58.5'	165	15	1013.5
28	0745	63	E-7	12°30.1'S	78°06.3'	160	17	1013.5
28	1052	64	E-8	12°40.2'S	78°24.1'	135	10	1015.0
28	1519	65	E-10	12°59.7'S	78°59.1'	160	8	1016.0
28	1944	66	E-11	13°20.1'S	79°35.3'	150	12	1014.5

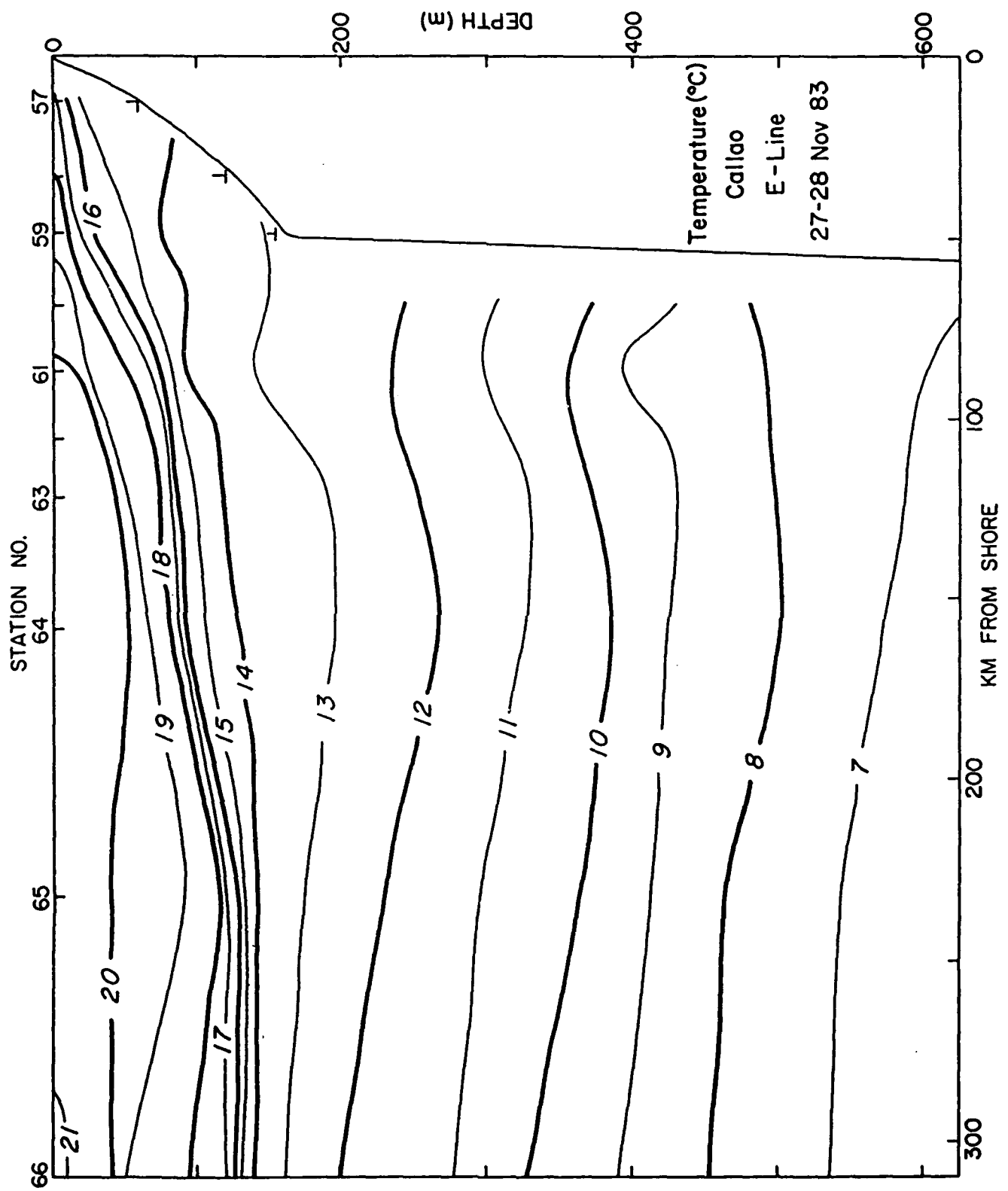

Temperature (°C)
(along 85°W)
A-Line
15-18 November 1983
Depth (m)
KM FROM STATION 1
STATION NO.
3°01'N
0°00'
5°00'S
>26
26
24
22
21
20
18
16
15
14
13
12
11
10
9
8
7

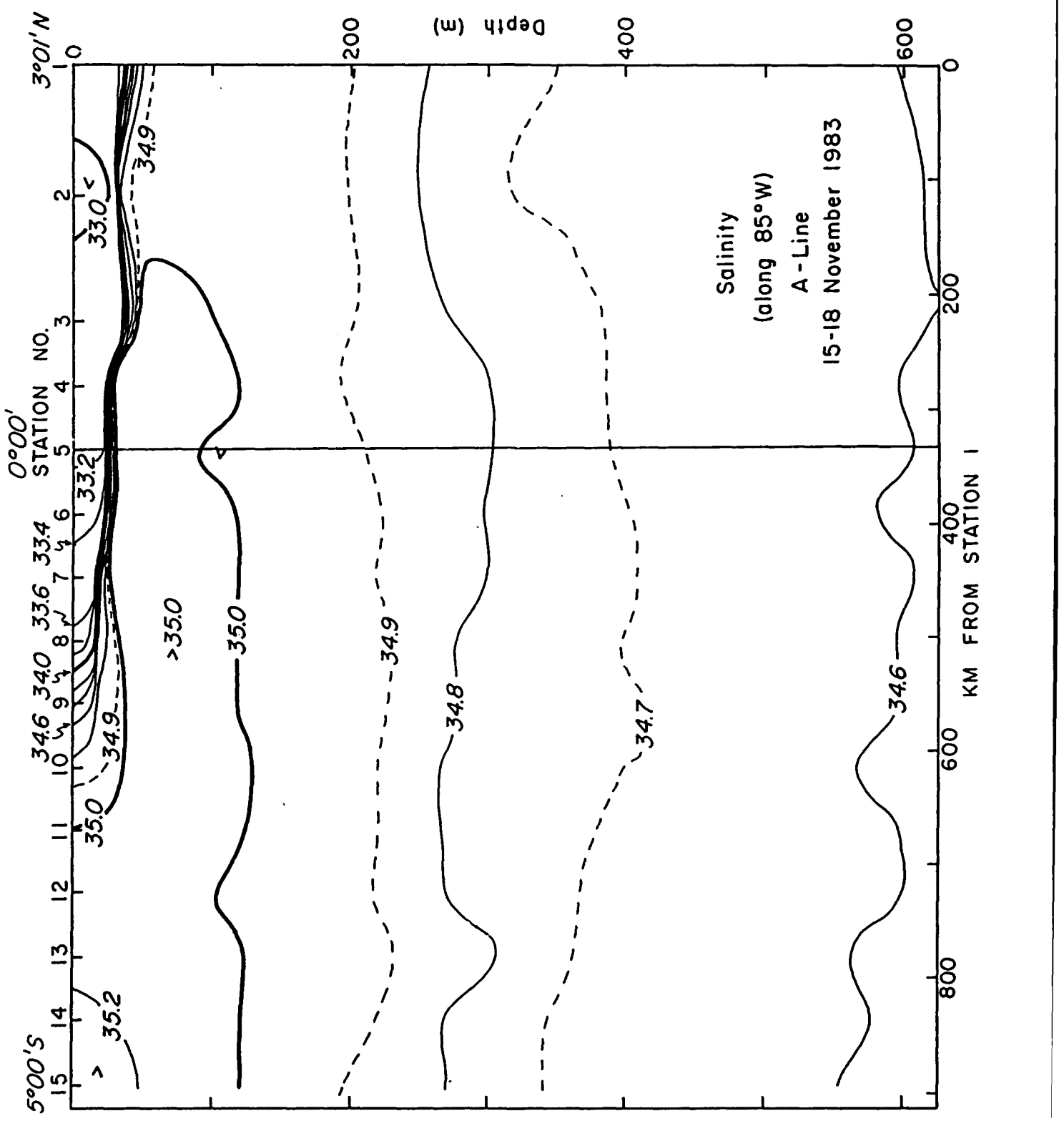

DEPTH (m)
0
200
400
600
STATION NO.
16
17
18
19
20
21
22
23
24
25
26
27
KM FROM SHORE
0
100
200
300
Temperature (°C)
Paita
8 - Line 5°S
19-20 November 1983
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

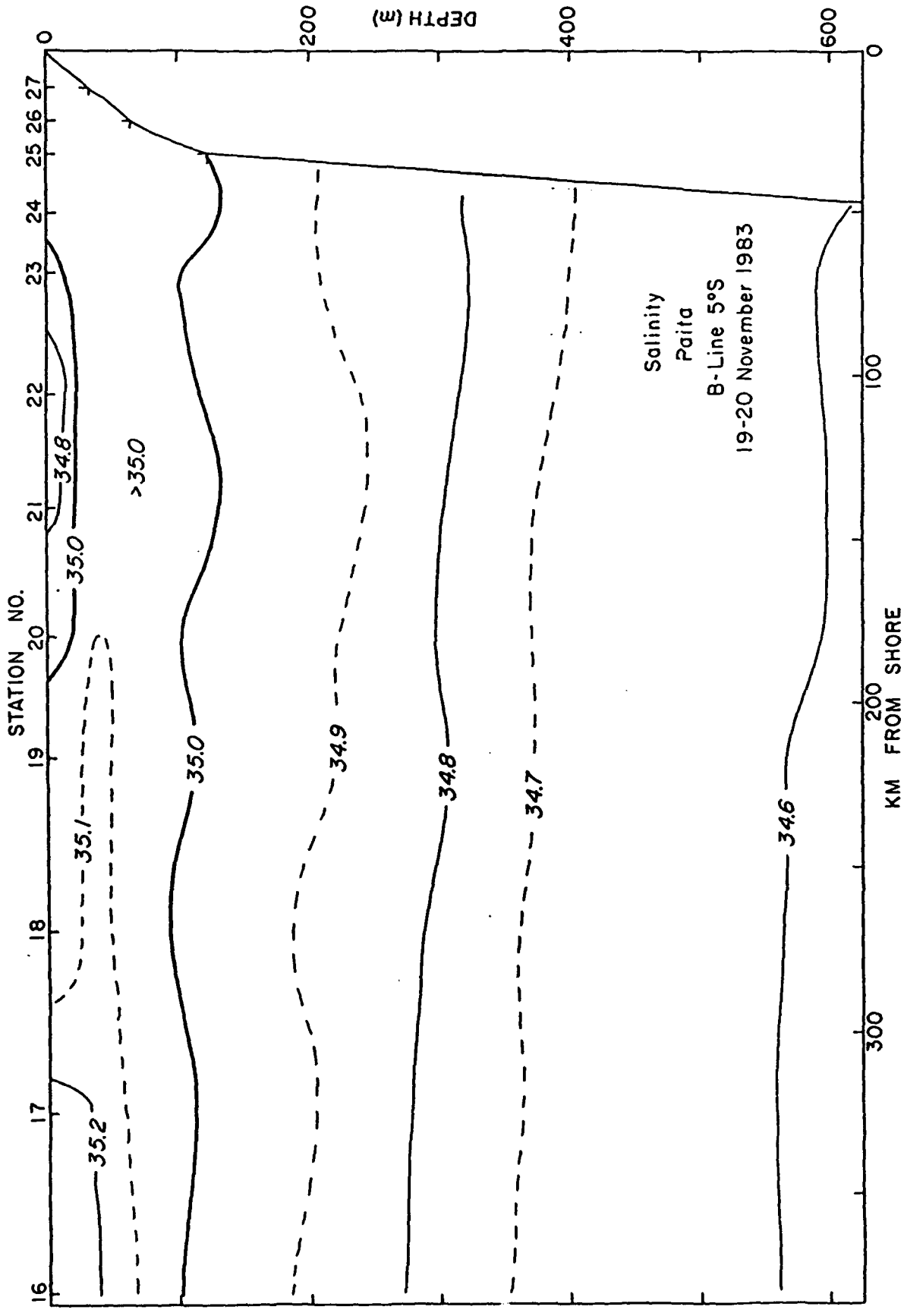

Temperature (°C)
Lobos de Afuera
C - Line
22 Nov 1983
DEPTH (m)
0
200
400
600
STATION NO.
29
30
31
33
35
KM FROM SHORE
0
50
100
150
20
19
18
17
16
15
14
13
12
11
10
9
8
7

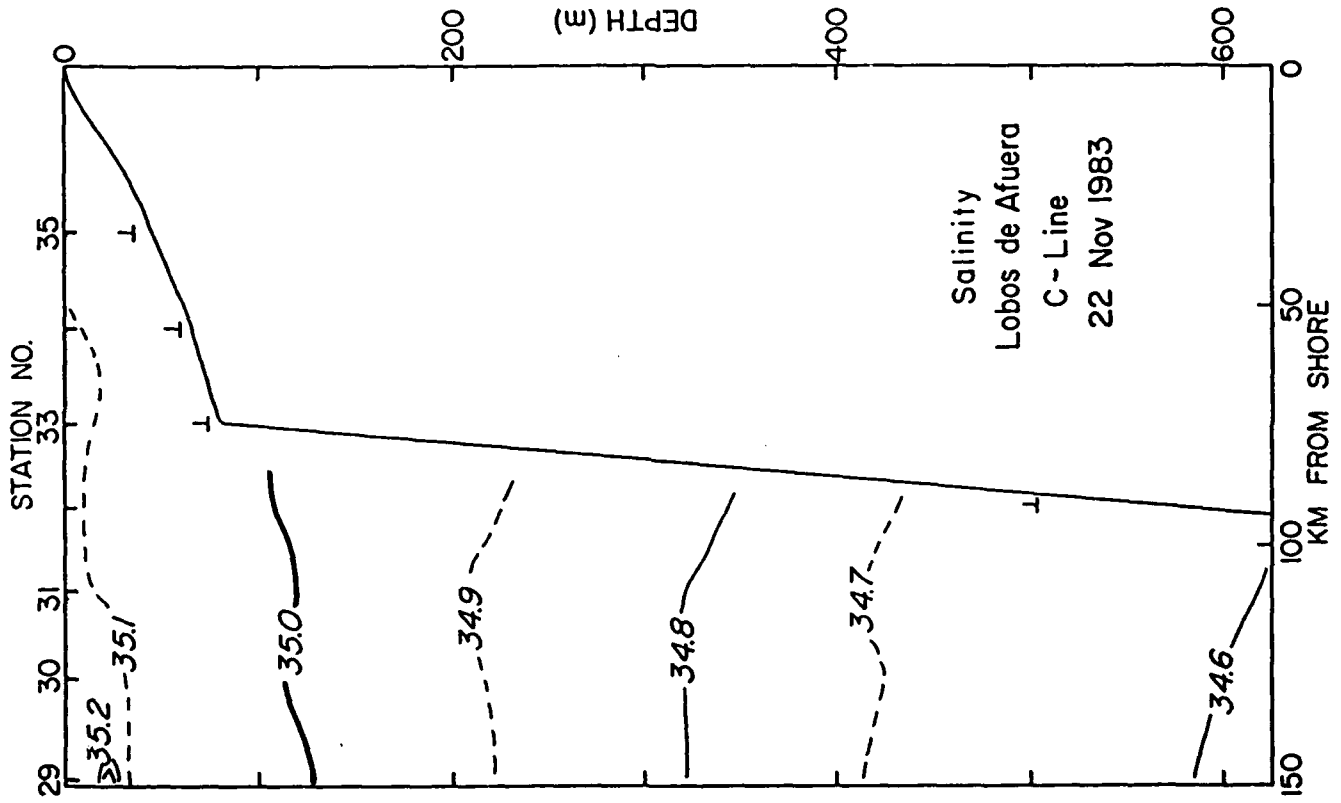

Temperature (°C)
D - Line
Chimbote
23-25 November 1983
DEPTH (m)
0
200
400
600
STATION NO.
37
39
41
43
45
47
49
KM FROM SHORE
0
100
200
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

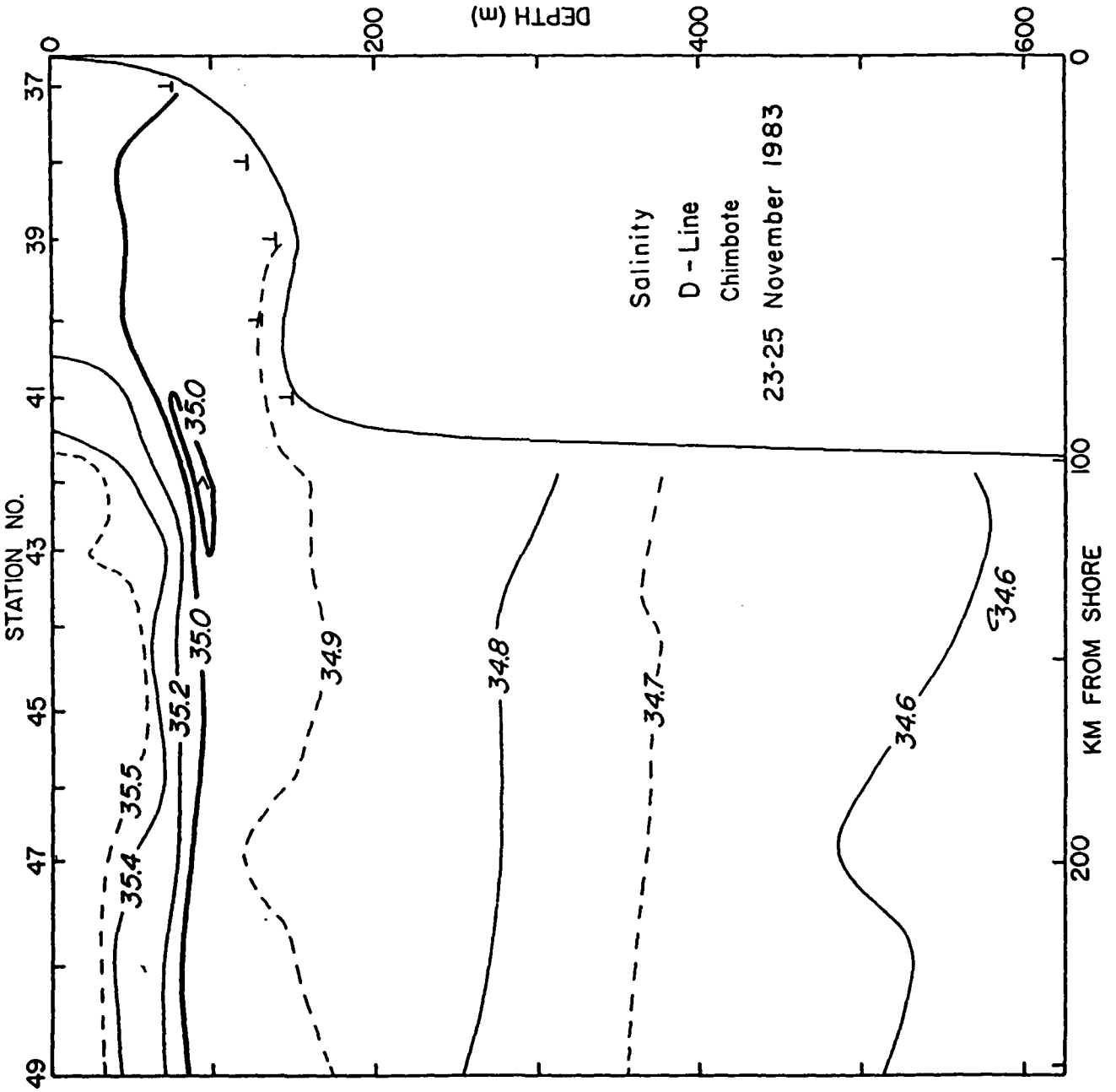

DEPTH (m)
0
200
400
600
STATION NO.
50
51
52
53
54
55
56
KM FROM SHORE
0
50
100
150
Temperature (°C)
Chimbote
D-Line
26-27 November 1983
19
20
21
18
16
14
15
13
12
11
10
9
8
7

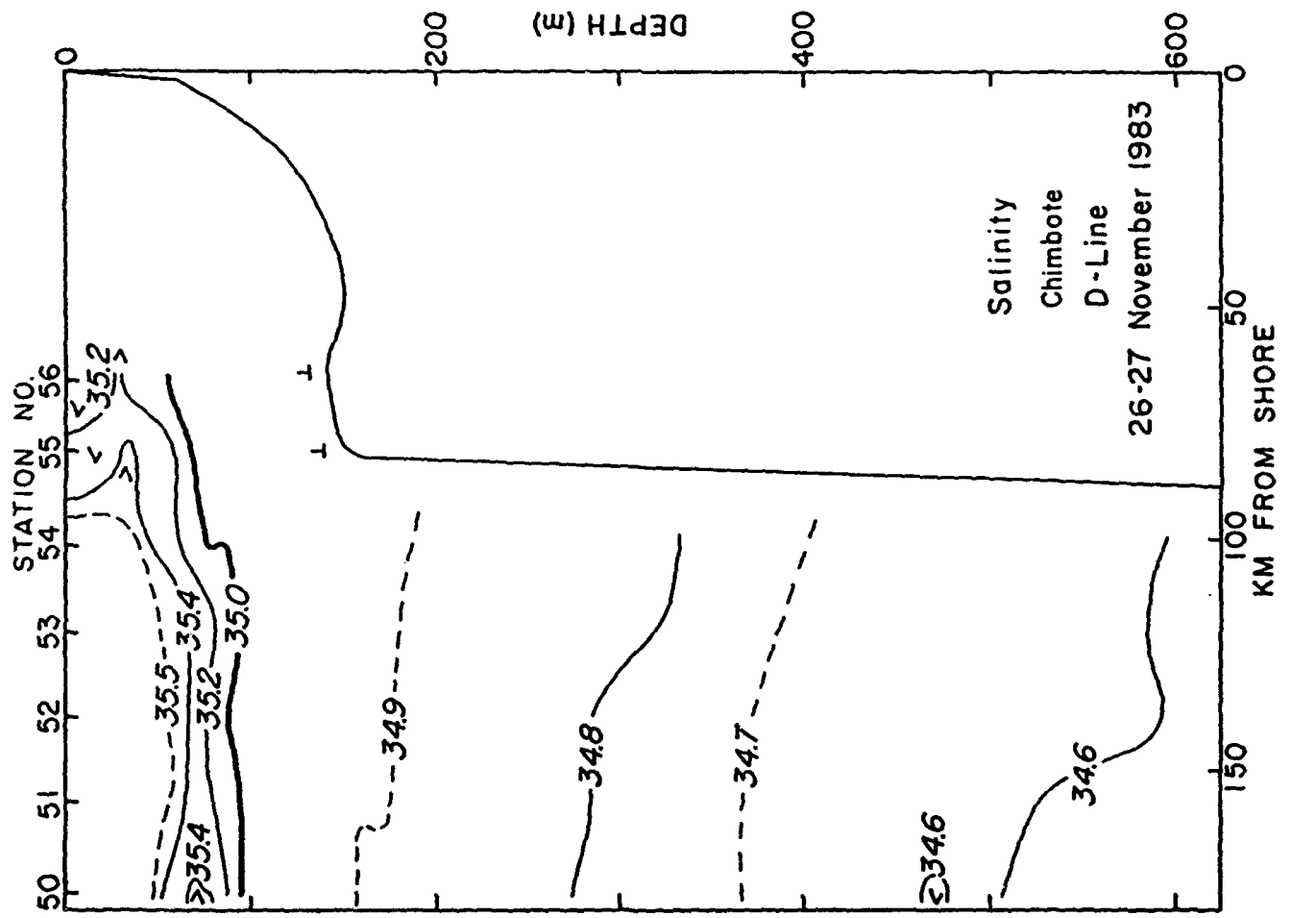

Temperature (°C)
Callao
E-Line
27-28 Nov 83
DEPTH (m)
0
200
400
600
STATION NO.
57
59
61
63
64
65
66
KM FROM SHORE
0
100
200
300
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7

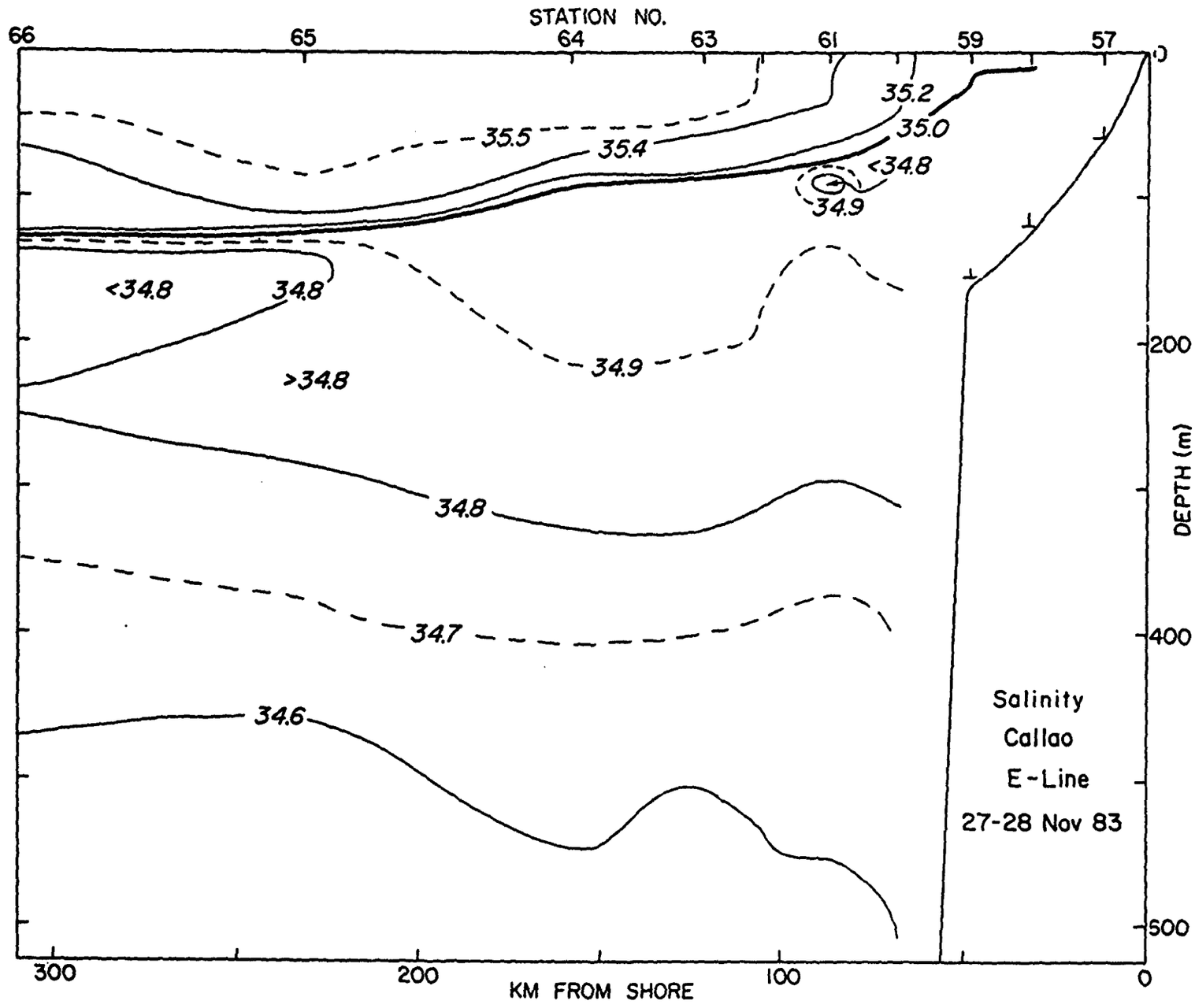

Salinity
(along 85°W)
A-Line
15-18 November 1983
Depth (m)
KM FROM STATION 1
STATION NO.
3°01'N
0°00'
5°00'S
>35.0
35.0
34.9
34.8
34.7
34.6
33.0
33.2
33.4
33.6
34.0
34.6
35.2

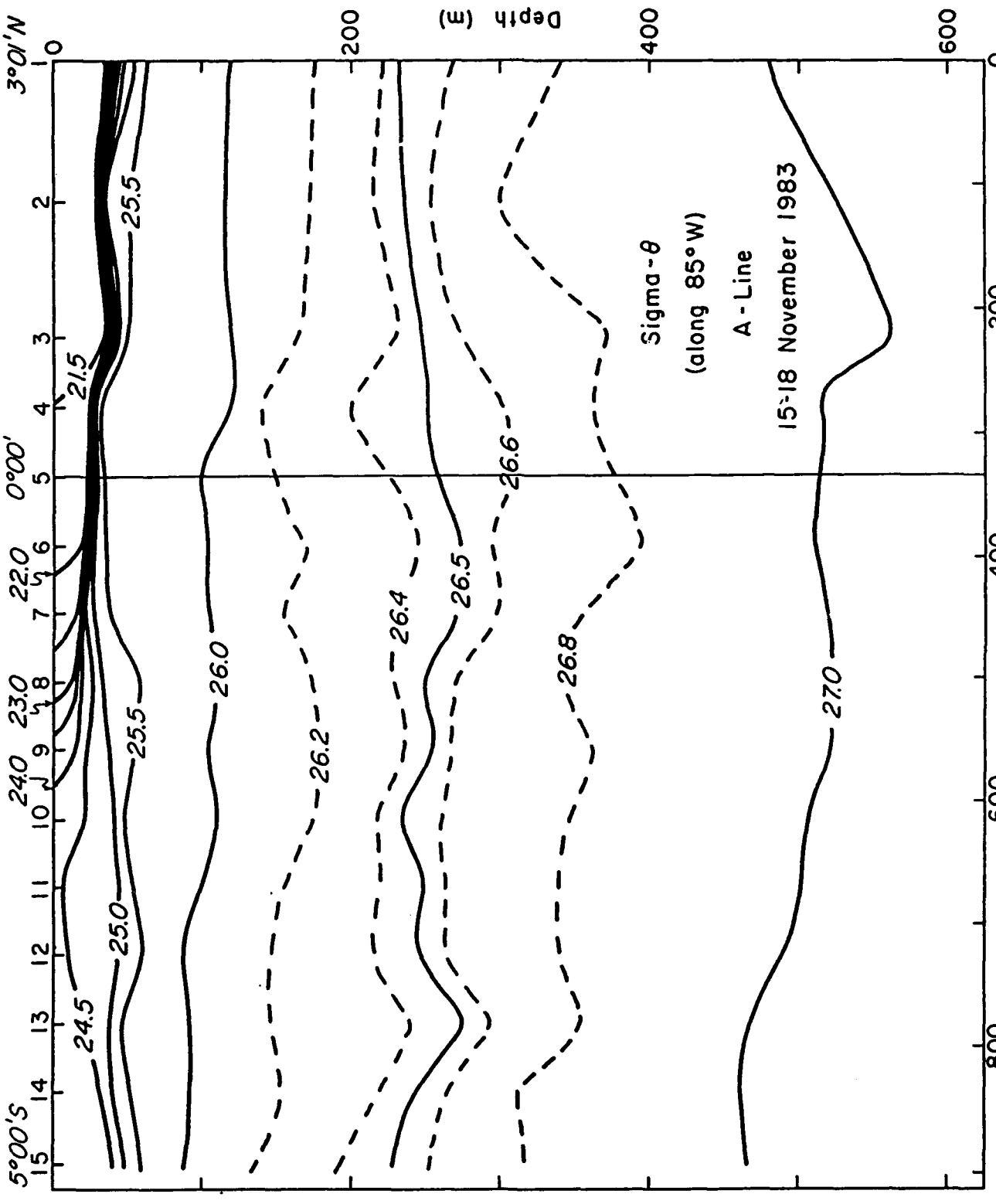

DEPTH (m)
0
200
400
600
STATION NO.
16
17
18
19
20
21
22
23
24
25
26
27
KM FROM SHORE
0
100
200
300
Salinity
Paita
B-Line 5°S
19-20 November 1983
34.8
35.0
>35.0
35.1
35.2
35.0
34.9
34.8
34.7
34.6

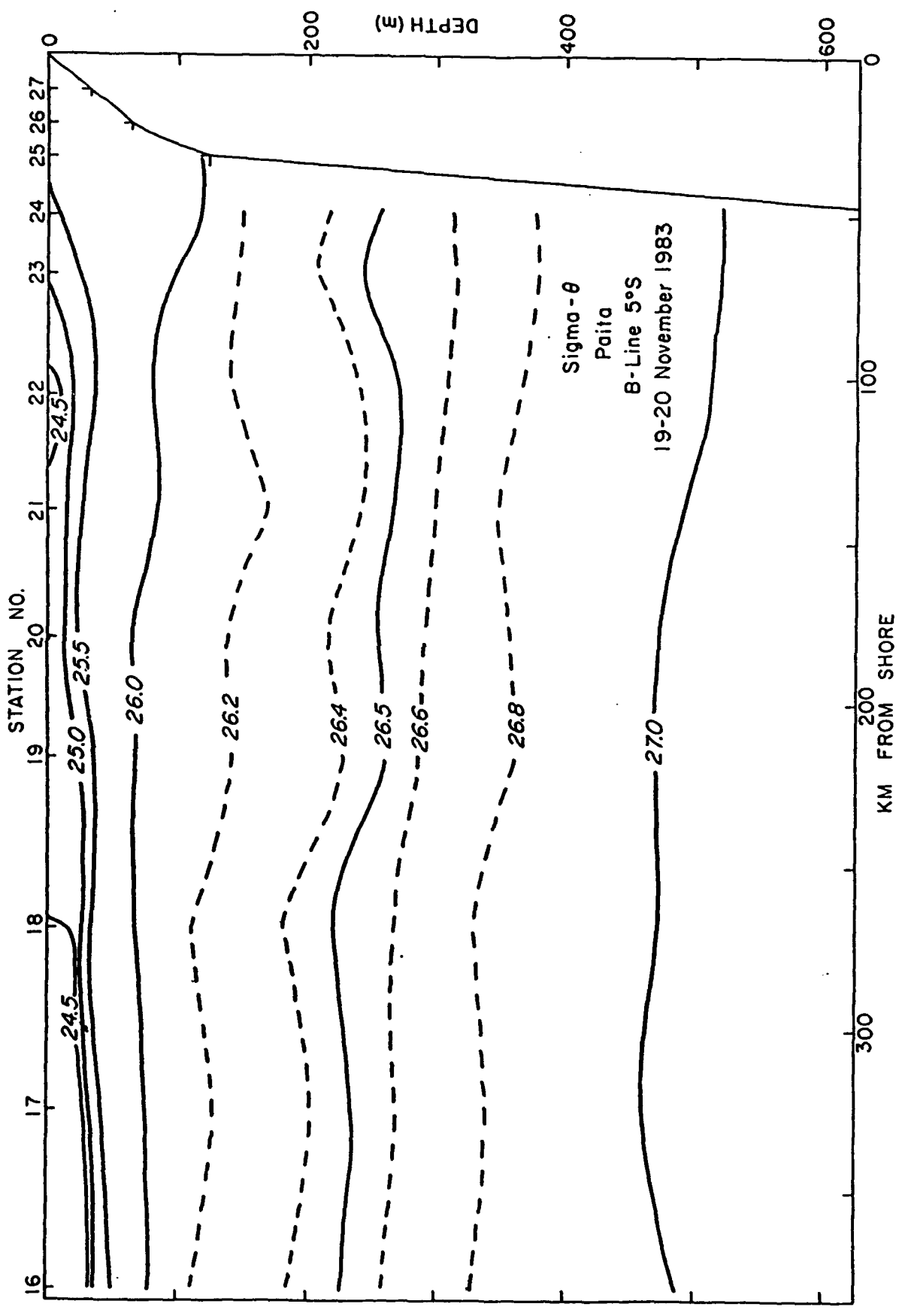

DEPTH (m)
0
200
400
600
0
50
100
150
KM FROM SHORE
STATION NO.
29
30
31
33
35
Salinity
Lobos de Afuera
C - Line
22 Nov 1983
≥35.2
35.1
35.0
34.9
34.8
34.7
34.6

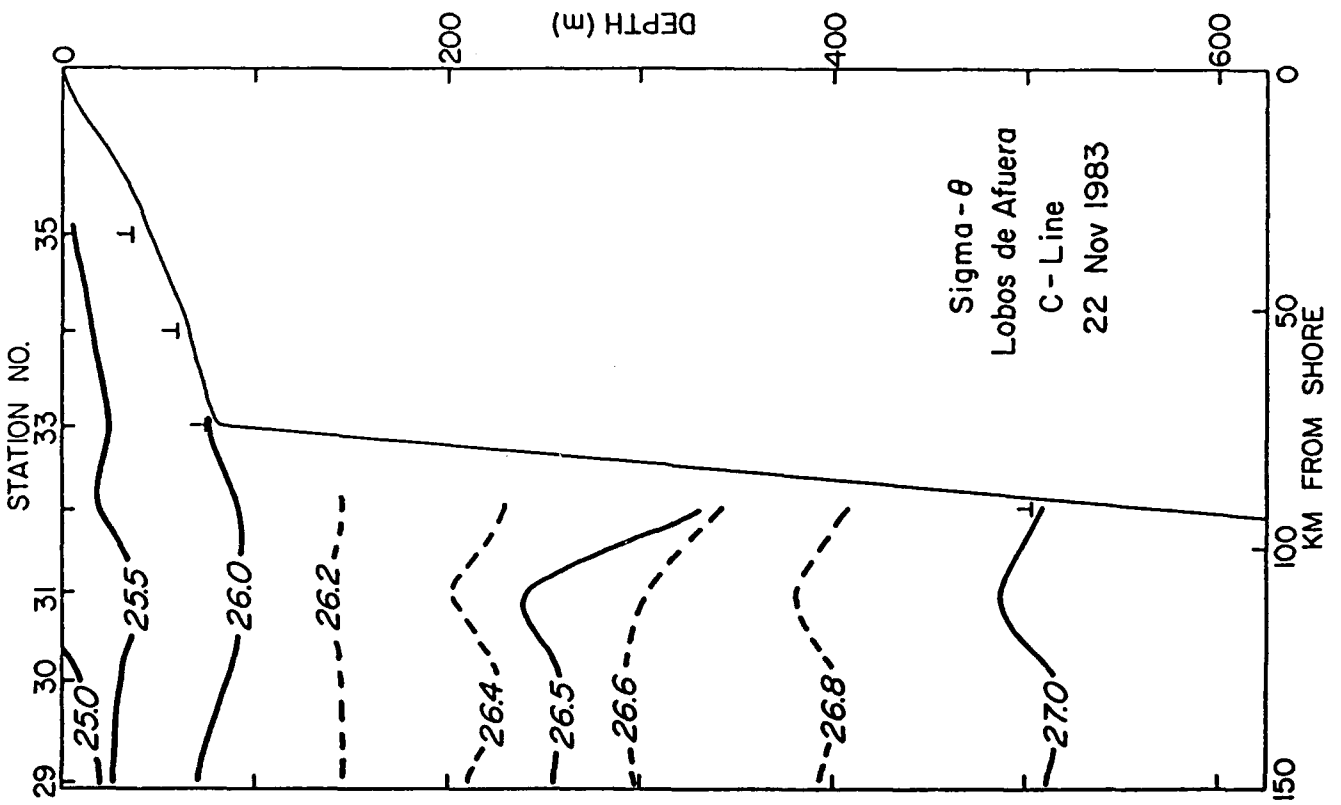

Salinity
D - Line
Chimbote
23-25 November 1983
DEPTH (m)
0
200
400
600
STATION NO.
37
39
41
43
45
47
49
KM FROM SHORE
0
100
200
35.0
35.0
35.2
35.5
35.4
34.9
34.8
34.7
34.6
34.6

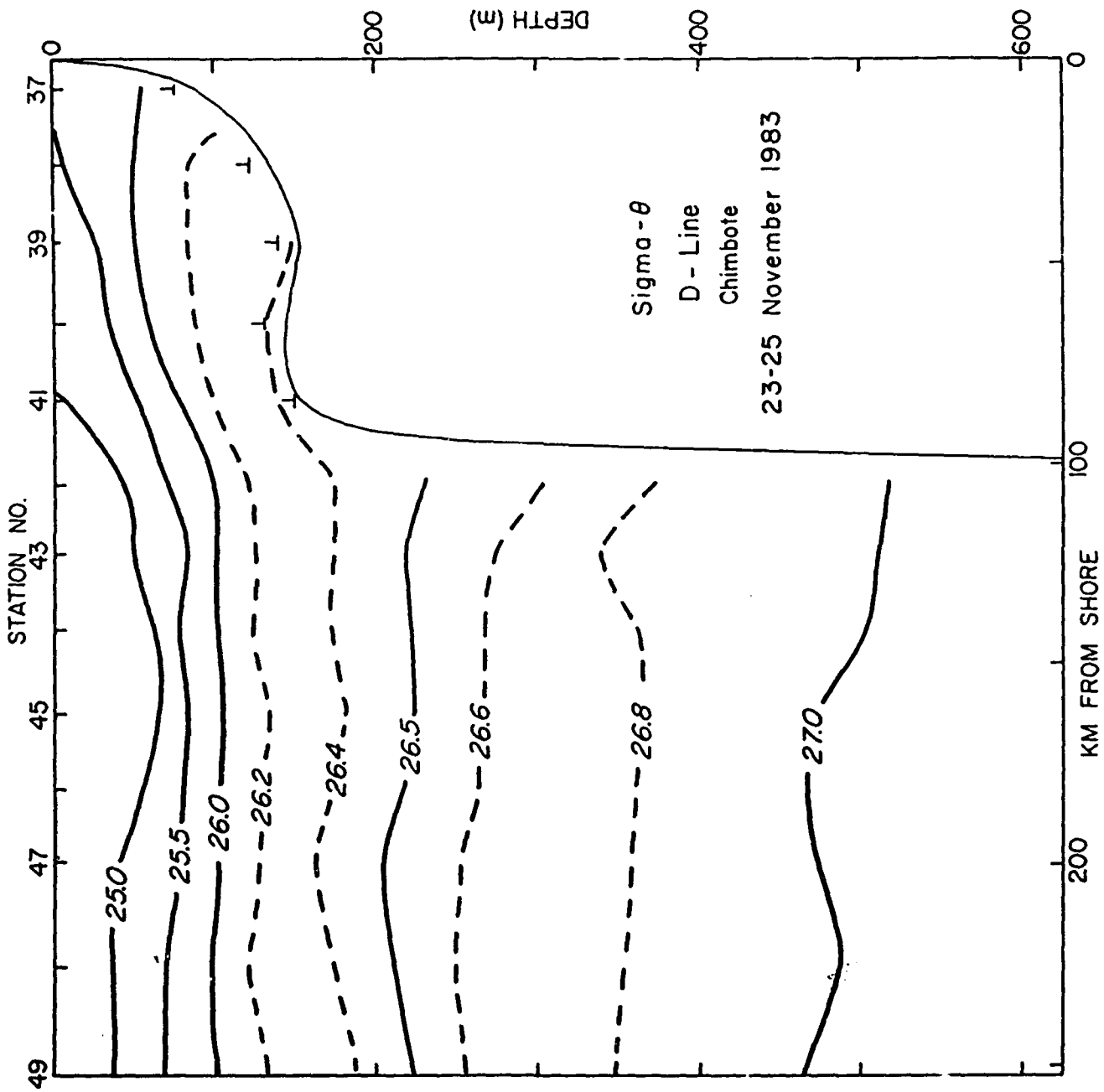

Salinity
Chimbote
D-Line
26-27 November 1983
DEPTH (m)
KM FROM SHORE
STATION NO.
35.5
35.4
35.2
35.0
≥35.4
34.9
34.8
34.7
≤34.6
34.6
<35.2

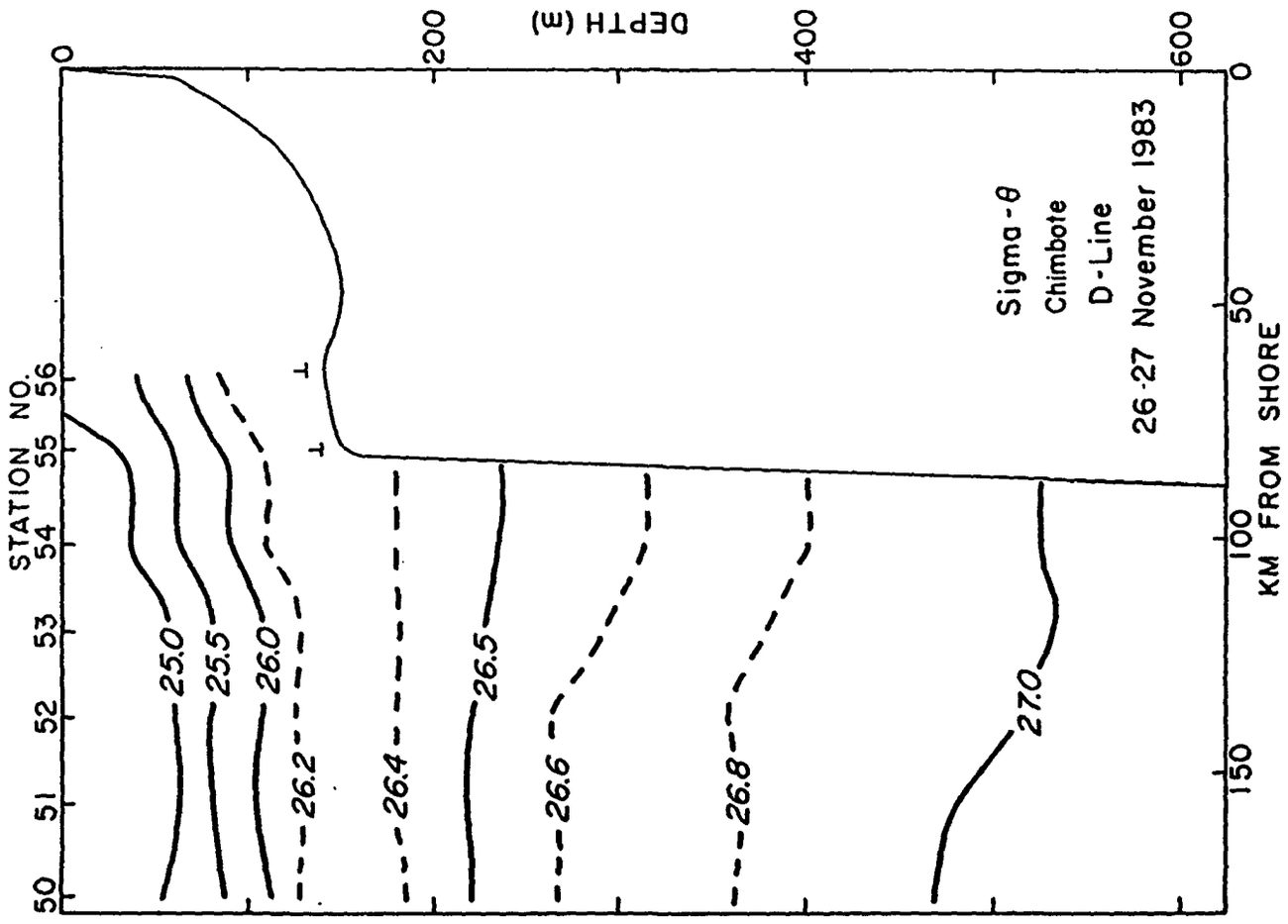

STATION NO.
66
65
64
63
61
59
57
0
35.2
35.5
35.4
35.0
<34.8
34.9
<34.8
34.8
34.9
>34.8
200
34.8
34.7
400
34.6
Salinity
Callao
E-Line
27-28 Nov 83
DEPTH (m)
500
300
200
100
0
KM FROM SHORE

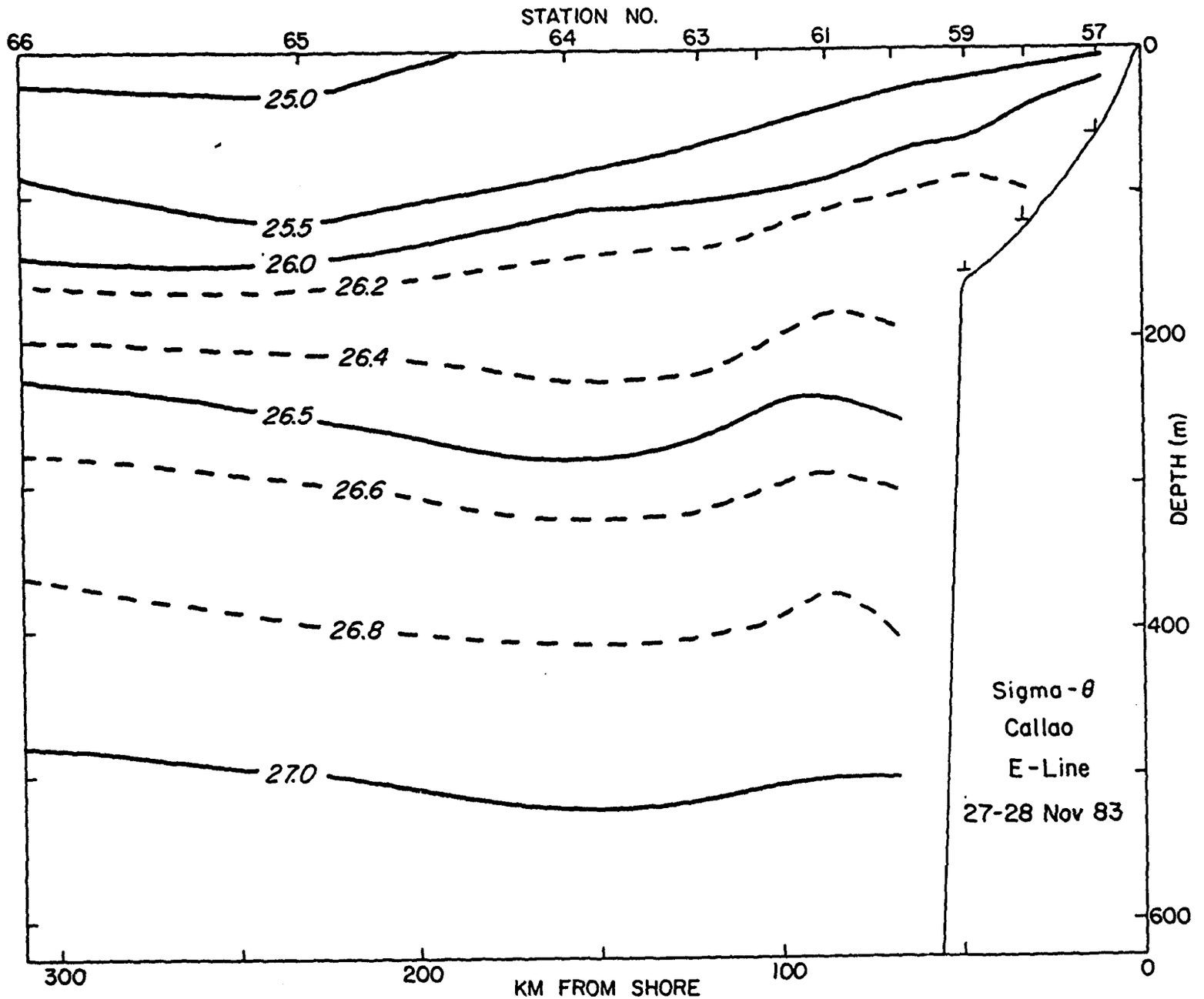

3°01'N
0°00'
5°00'S
Depth (m)
0
200
400
600
800
KM FROM STATION 1
Sigma-θ
(along 85° W)
A-Line
15-18 November 1983
21.5
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
22.0
23.0
24.0

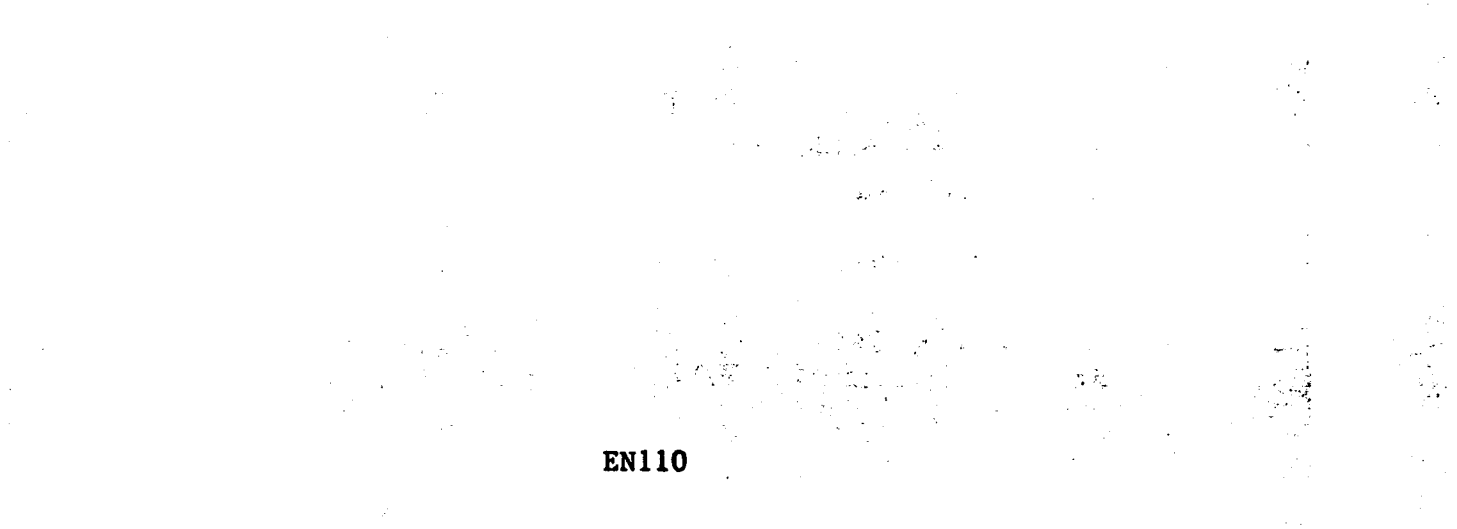

DEPTH (m)
0
200
400
600
0
100
200
300
KM FROM SHORE
STATION NO.
16
17
18
19
20
21
22
23
24
25
26
27
Sigma-θ
Paita
B-Line 5°S
19-20 November 1983
24.5
25.0
24.5
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0


DEPTH (m)
0
200
400
600
STATION NO.
29
30
31
33
35
KM FROM SHORE
0
50
100
150
Sigma-θ
Lobos de Afuera
C-Line
22 Nov 1983
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0


DEPTH (m)
0
200
400
600
0
100
200
KM FROM SHORE
STATION NO.
37
39
41
43
45
47
49
Sigma-θ
D - Line
Chimbote
23-25 November 1983
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0


DEPTH (m)
0
200
400
600
STATION NO.
50
51
52
53
54
55
56
0
50
100
150
KM FROM SHORE
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
Sigma-θ
Chimbote
D-Line
26-27 November 1983


STATION NO.
66
65
64
63
61
59
57
0
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
200
400
600
DEPTH (m)
Sigma-θ
Callao
E-Line
27-28 Nov 83
300
200
100
0
KM FROM SHORE



EN110

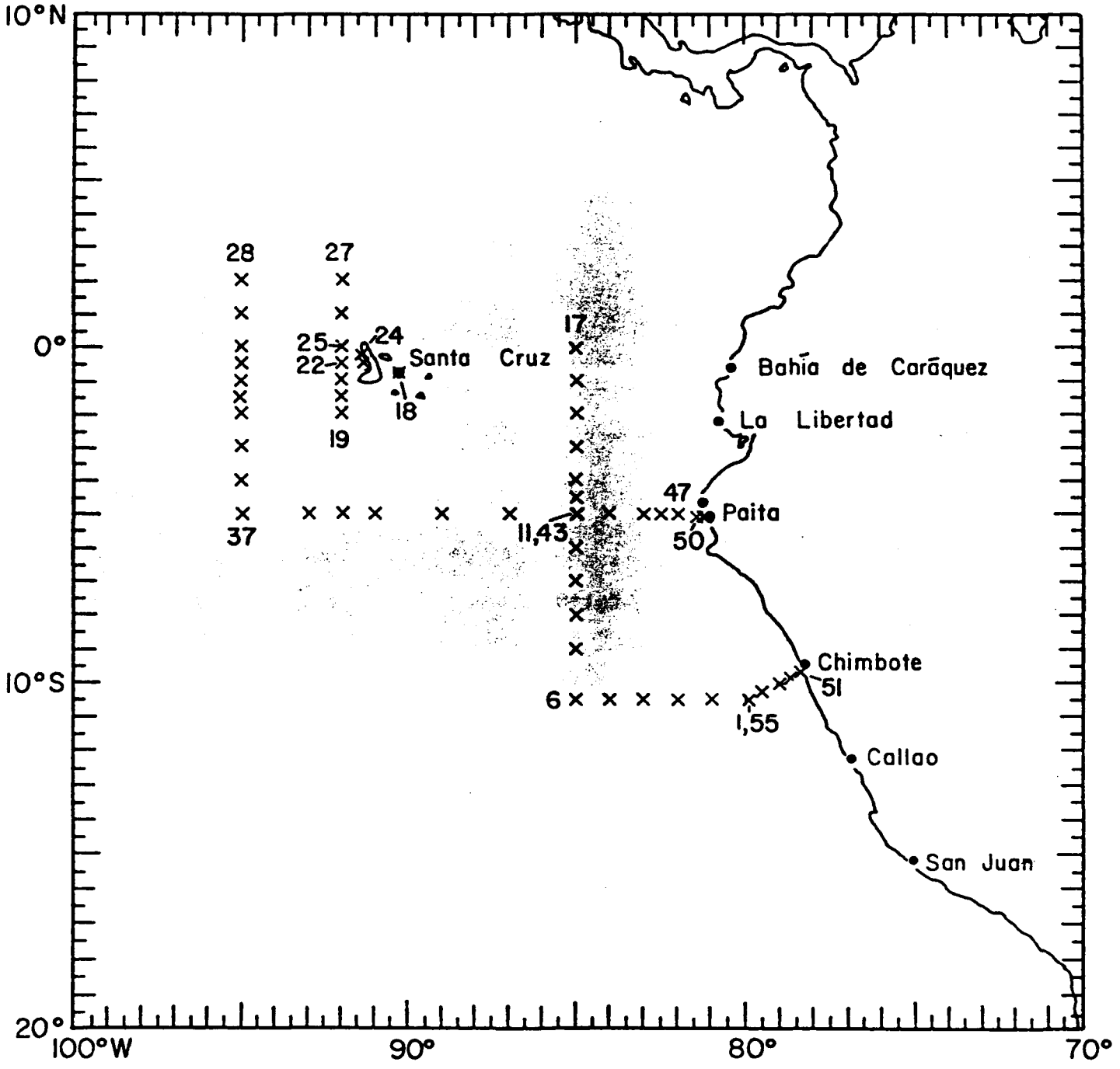


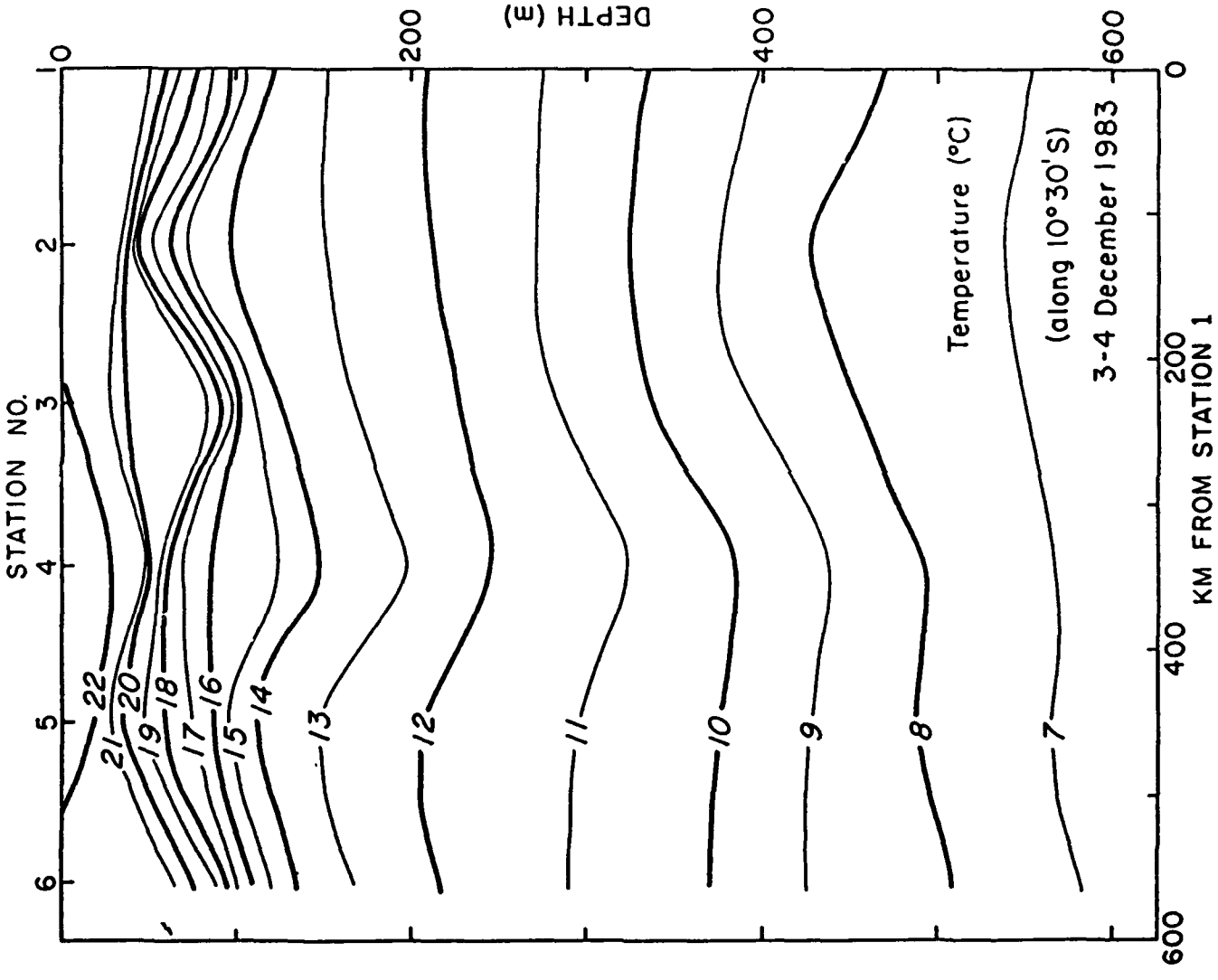
Figure 4. Location of CTD stations during EN110, 3-19 December 1983.

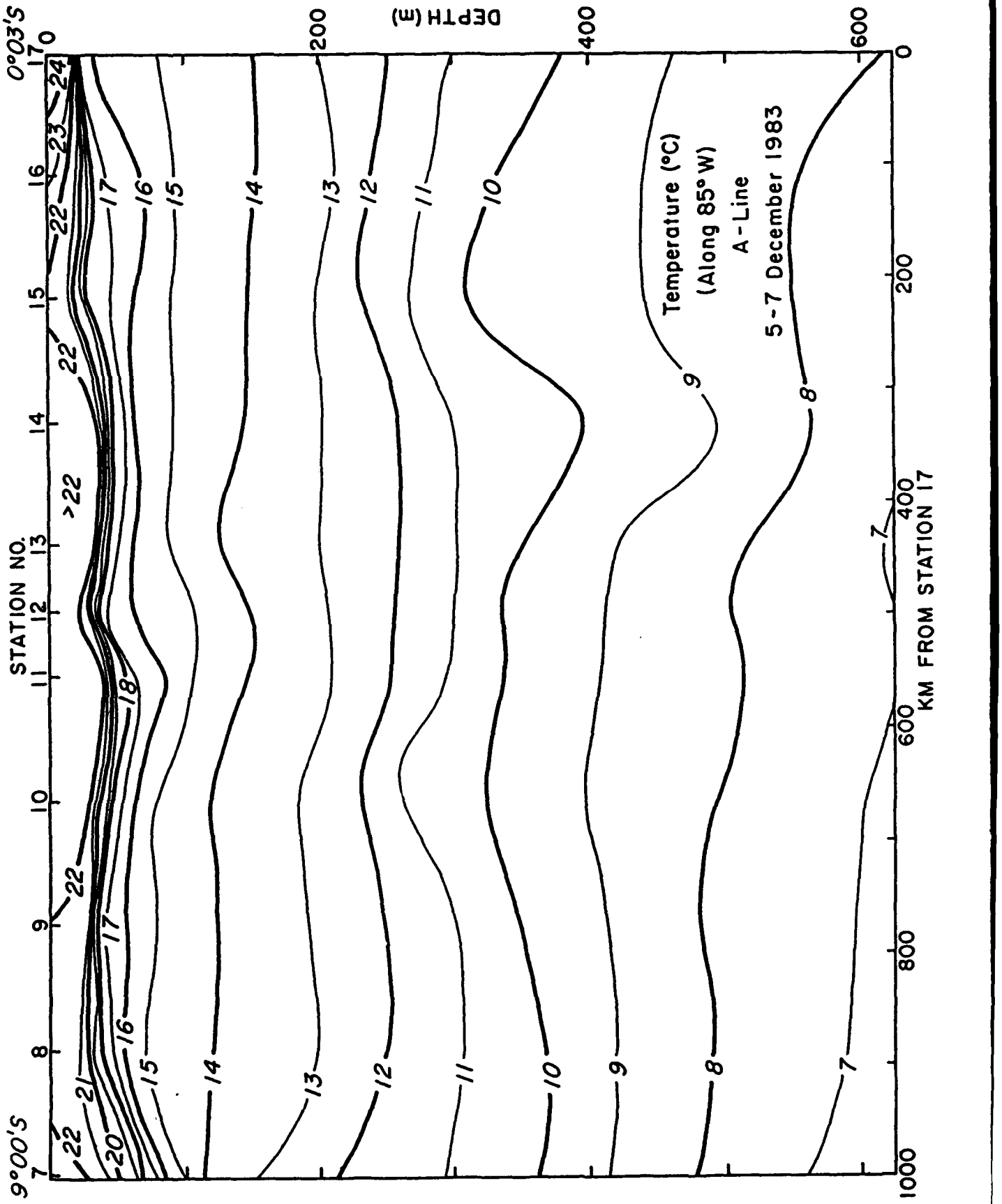
Table 5. List of stations occupied during EN110 showing date, time, location, wind speed and direction and atmospheric pressure.

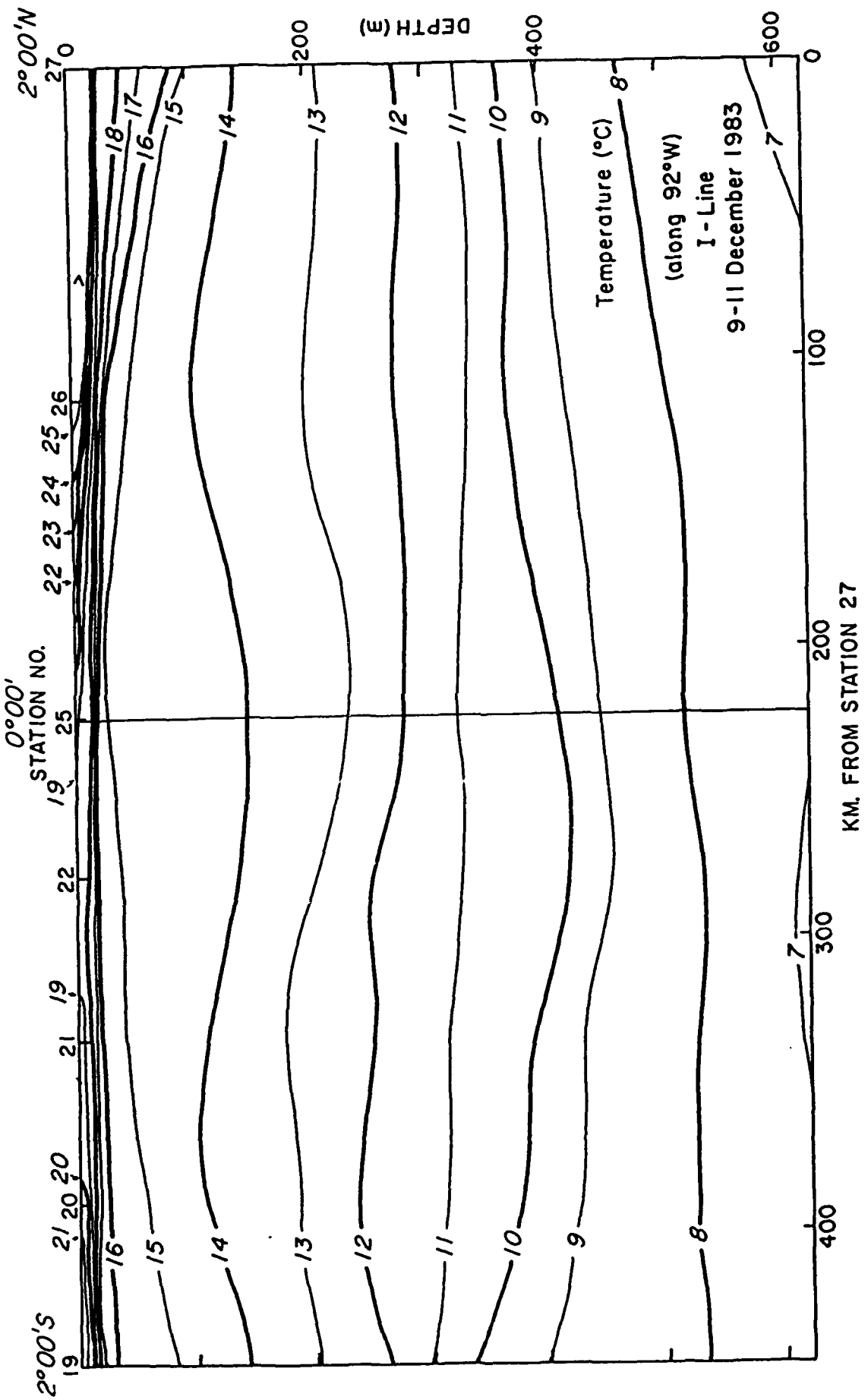
Date (1983)	Time (GMT)	Station No.	Name	Location Lat.	Location Long.	Wind Dir (°T)	Wind Spd (kts)	Pressure (mb)
Dec 3	0820	1	Q-5	10°30.0S	79°54.2W	160	10	1015.0
3	1516	2	Q-6	10 28.9S	81 00.1	150	12	1018.0
3	2113	3	Q-7	10 29.7S	81 59.6	155	11	1014.0
4	0310	4	Q-8	10 29.6S	83 00.6	150	17	1017.5
4	0123	5	Q-9	10 30.1S	84 00.0	120	11	1017.0
4	1509	6	Q-10	10 29.9S	85 00.1	110	7	1019.0
5	0042	7	Q-11	09 00.2S	84 59.9	130	13	1016.0
5	0036	8	Q-12	08 00.0S	84 59.6	145	12	1017.0
5	1308	9	Q-13	06 59.2S	85 00.6	145	8	1018.5
5	1907	10	Q-14	05 60.0S	85 00.1	135	13	1016.2
6	0143	11	Q-15	05 00.5S	85 00.0	160	17	1016.0
6	0503	12	Q-15A	04 30.0S	84 59.8	160	15	1017.5
6	0849	13	Q-16	03 58.2S	85 01.4	160	12	1016.0
6	1434	14	Q-17	02 59.9S	85 00.3	160	10	1018.0
6	2010	15	Q-17A	01 59.5S	85 00.1	130	9	1014.8
6	0245	16	Q-18	01 00.2S	85 00.2	160	8	1017.0
7	0815	17	Q-184	00 02.6S	85 01.8	170	10	1014.5
9	0526	18	Q-19	00 47.5S	90 17.0	180	10	1016.2
9	1546	19	Q-22	2 00.0S	92 00.1	110	15	1017.0
9	2019	20	Q-23	1 30.0S	92 00.4	125	10	1014.5
10	0038	21	Q-24	1 00.0S	92 00.5	140	10	1015.0
10	0445	22	Q-25	0 29.9S	92 00.1	180	11	1017.0
10	1101	23	Q-26	0 29.7S	91 20.2	100	13	1016.0
10	1453	24	Q-27	0 15.3S	91 24.9	135	8	1017.0
10	1942	25	Q-28	0 00.2S	92 00.1	180	10	1014.0
11	0334	26	Q-29	0 59.2N	92 00.0	180	11	1016.0
11	0914	27	Q-30	2 00.2N	91 58.4	200	12	1014.0
12	0132	28	Q-31	2 00.0N	94 59.6	150	15	1014.0
12	0816	29	Q-32	0 59.8N	95 00.2	160	11	1014.2
12	1604	30	Q-33	0 00.1N	94 59.9	150	12	1018.0
12	1956	31	Q-34	0 29.9S	95 00.2	160	10	1015.0
13	0006	32	Q-35	1 01.6S	95 00.4	160	2	1014.0
13	0404	33	Q-36	1 31.4S	95 02.4	070	3	1016.0
13	0730	34	Q-37	2 00.3S	94 59.9	--	calm	1015.2
13	1452	35	Q-38	2 59.4S	94 59.6	100	5	1017.0
14	0026	36	Q-39	4 01.0S	95 0.1	160	10	1015.0
14	0708	37	Q-40	5 00.9S	94 57.2	135	4	1014.0
14	1731	38	Q-43	5 00.4S	92 58.7	150	8	1016.0
15	0124	39	Q-44	4 59.9S	91 57.5	130	7	1014.0
15	0650	40	Q-45	5 00.0S	90 59.6	150	7	1014.5
15	1914	41	Q-46	5 00.5S	88 59.2	150	7	1015.0
16	0628	42	Q-47	5 00.0S	86 57.4	135	10	1015.0
16	1824	43	Q-48	5 00.0S	84 57.7	160	7	1015.0
17	0045	44	Q-49	4 58.3S	84.01.7	180	7	1014.0
17	0651	45	Q-50	5 00.5S	83 00.4	125	4	1015.0
17	1051	46	Q-51	5 00.1S	82 29.8	130	10	1015.0

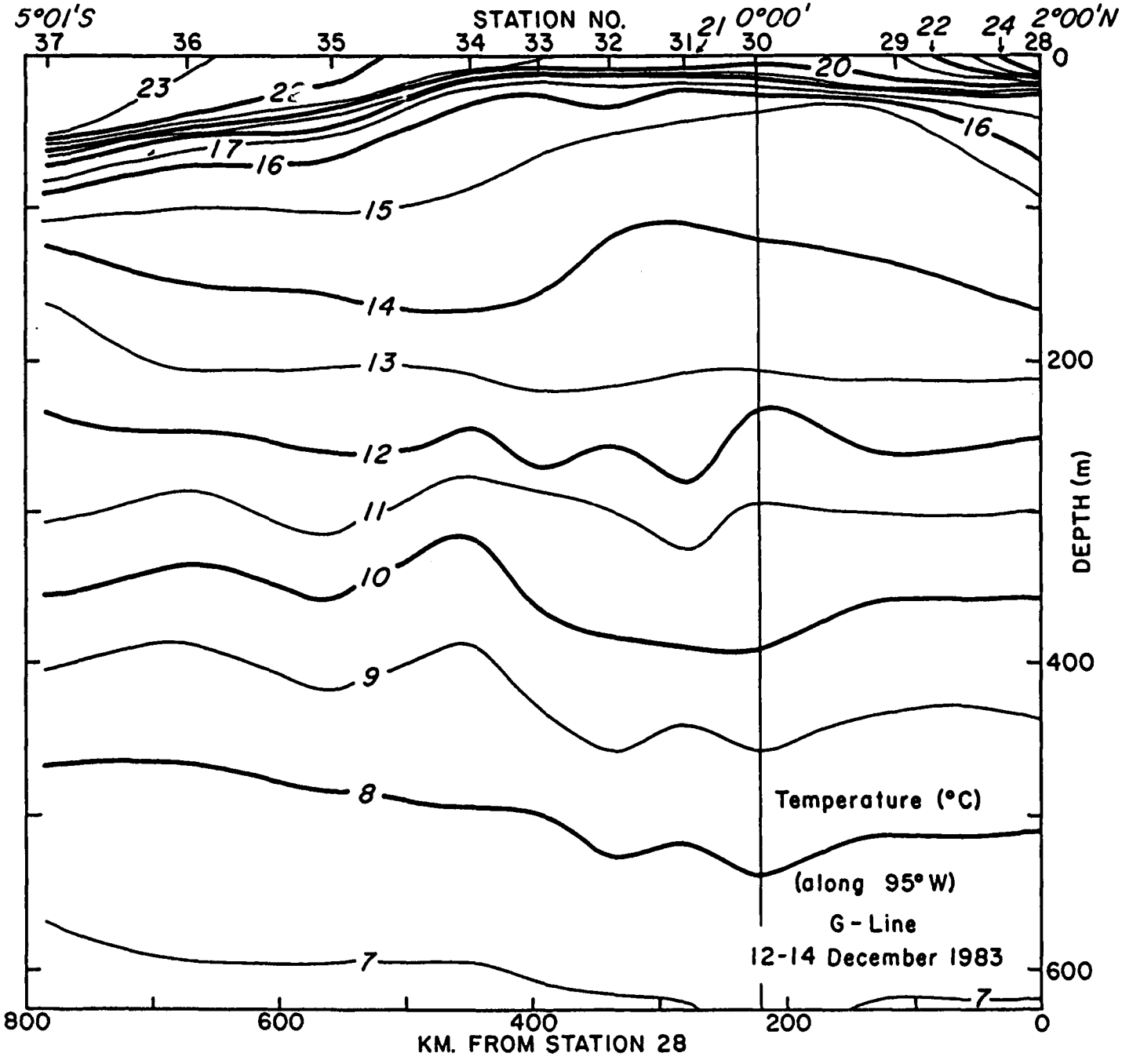
Table 5 cont'd.

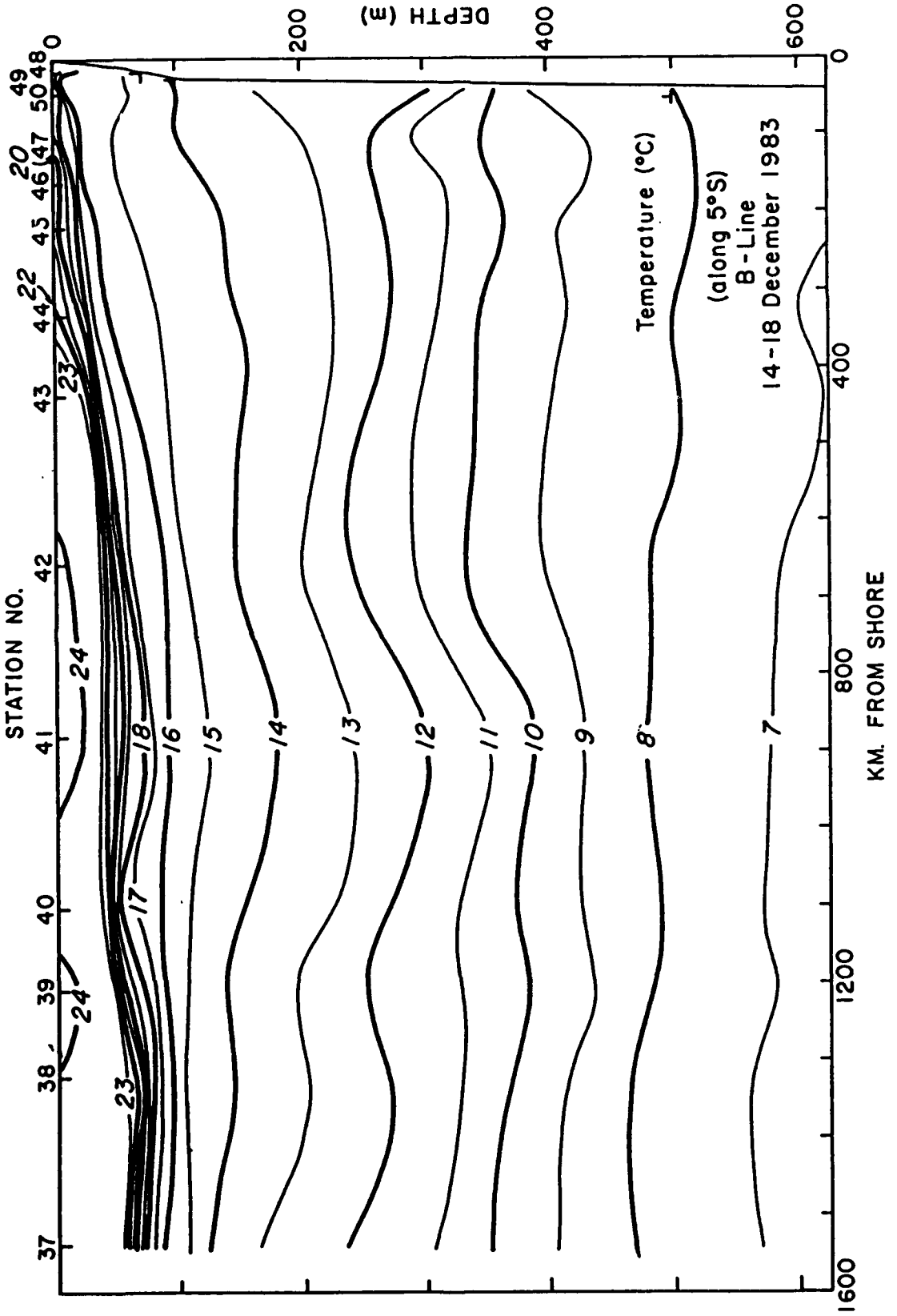
Date (1983)	Time (GMT)	Station No.	Station Name	Location Lat.	Location Long.	Wind Dir (°T)	Wind Spd (kts)	Pressure (mb)
Dec 17	1452	47	Q-52	5°00.0S	82°00.1W	160	8	1016.0
18	0107	48	Q-55	5 04.9S	81 12.0	180	12	1014.0
18	0214	49	Q-54	5 05.0S	81 16.8	180	10	1015.0
18	0512	50	Q-53	5 05.2S	81 27.6	130	5	1015.8
19	0956	51	Q-1	9 40.0S	78 24.0	150	6	1013.0
19	1219	52	Q-2	9 50.0S	78 42.0	160	10	1014.5
19	1441	53	Q-3	10 00.1S	79 01.1	140	12	1015.5
19	1758	54	Q-4	10 14.5S	79 32.1	165	14	1013.5
19	2139	55	Q-5	10 30.3S	79 54.8	150	12	1010.0

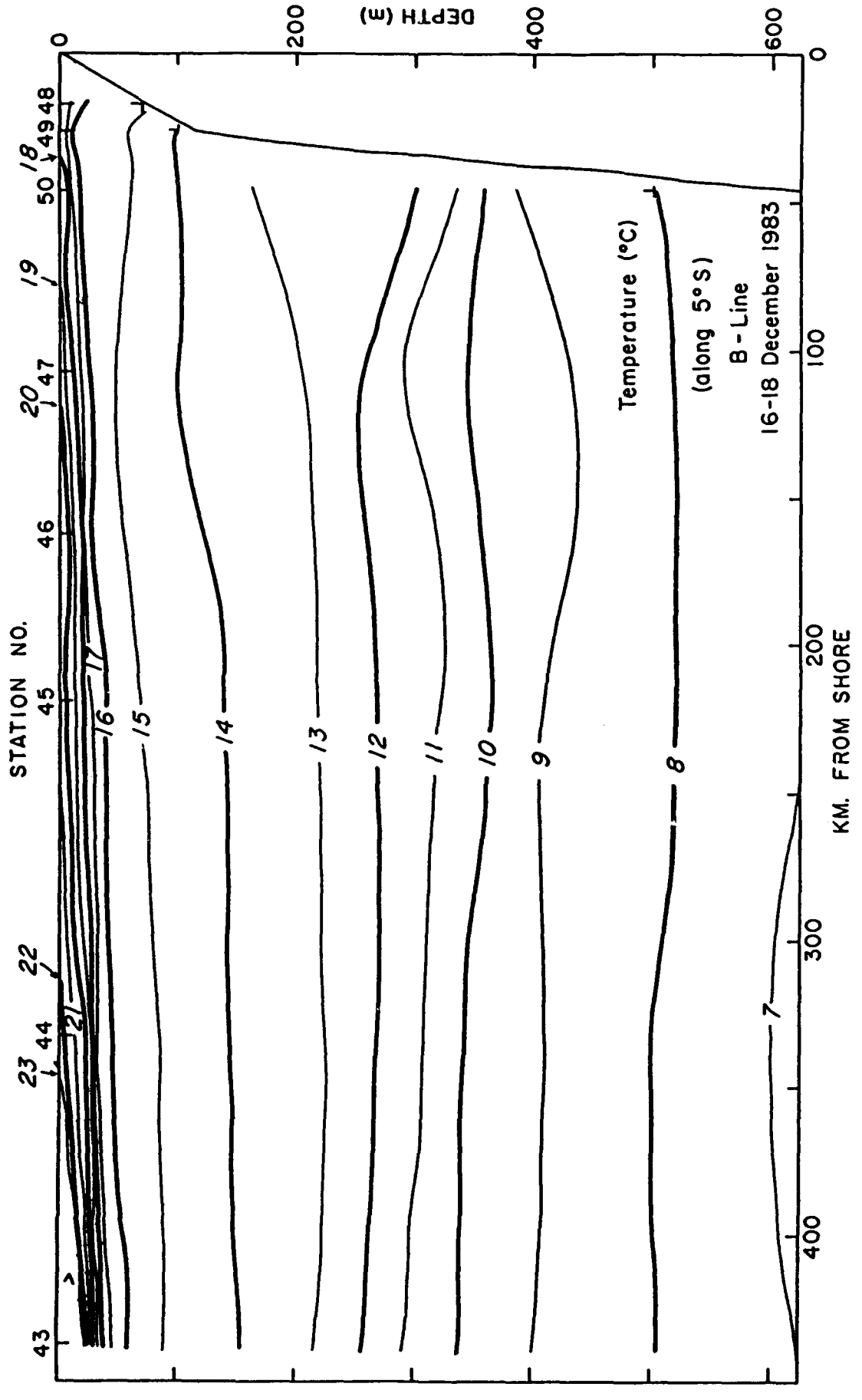

DEPTH (m)
0
200
400
600
STATION NO.
1
2
3
4
5
6
KM FROM STATION 1
0
200
400
600
Temperature (°C)
(along 10°30'S)
3-4 December 1983
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7

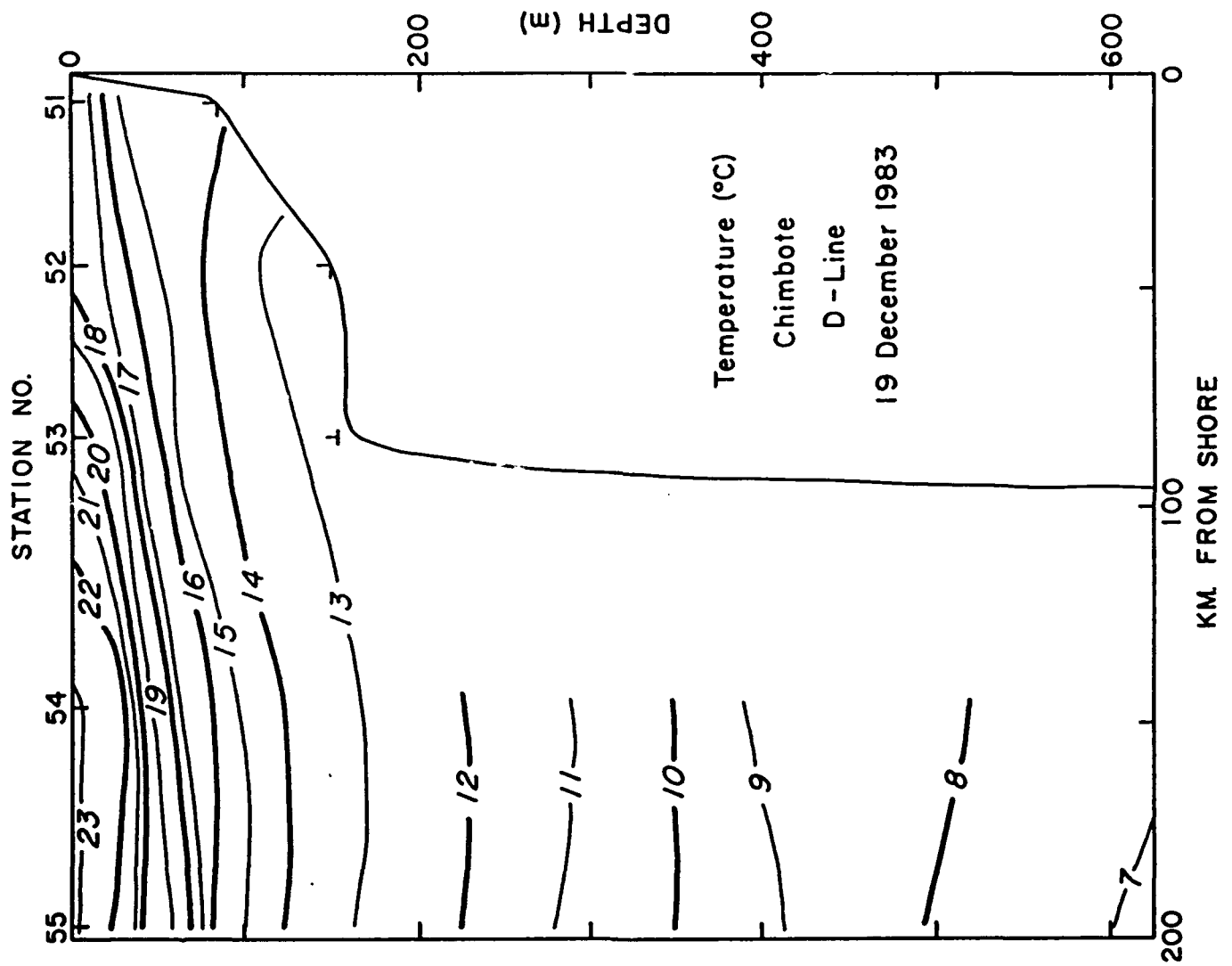

Temperature (°C)
(Along 85° W)
A-Line
5-7 December 1983
DEPTH (m)
STATION NO.
KM FROM STATION 17
9°00'S
0°03'S

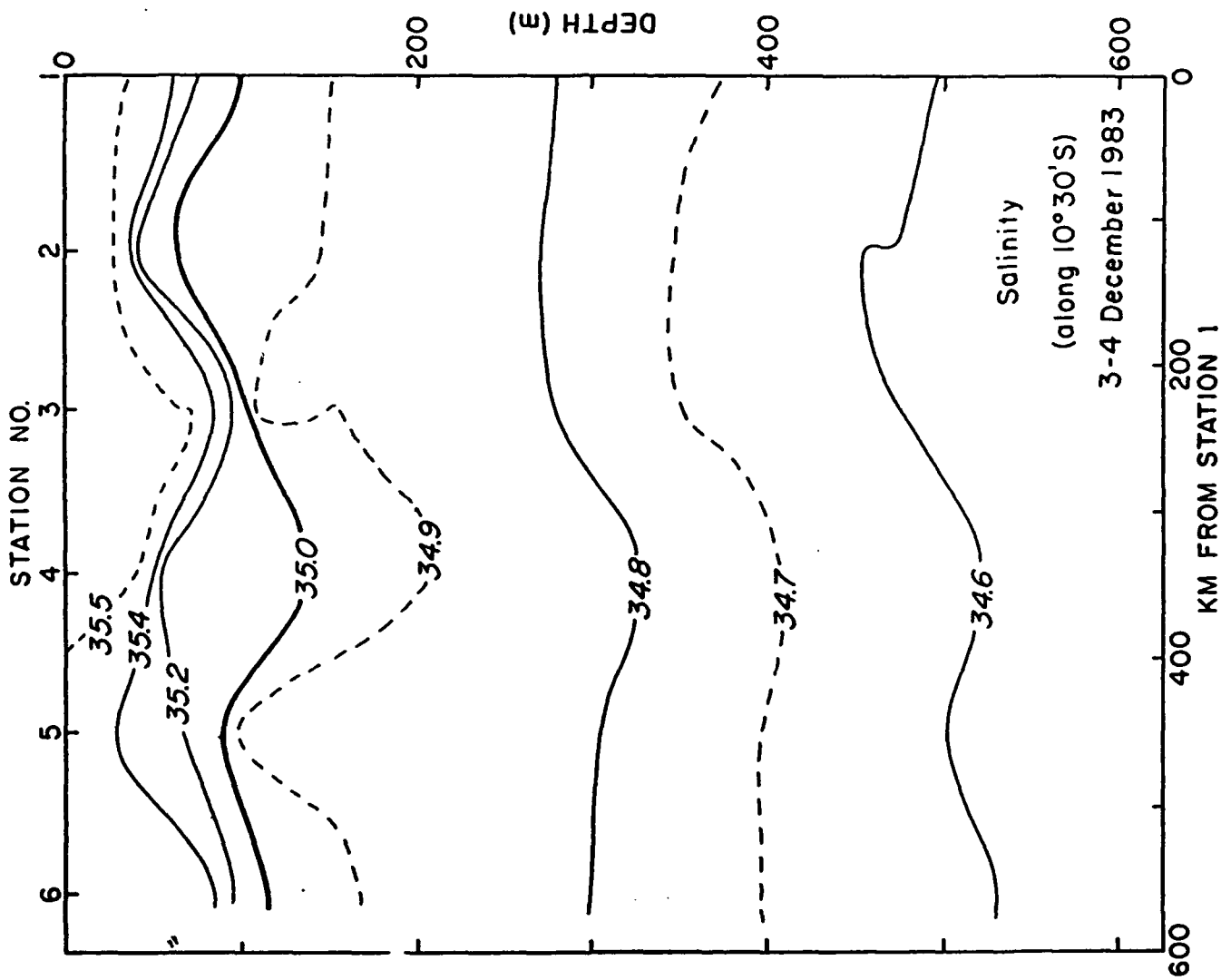

2°00'N
0°00'
2°00'S
STATION NO.
DEPTH (m)
Temperature (°C)
(along 92°W)
I-Line
9-11 December 1983
KM. FROM STATION 27

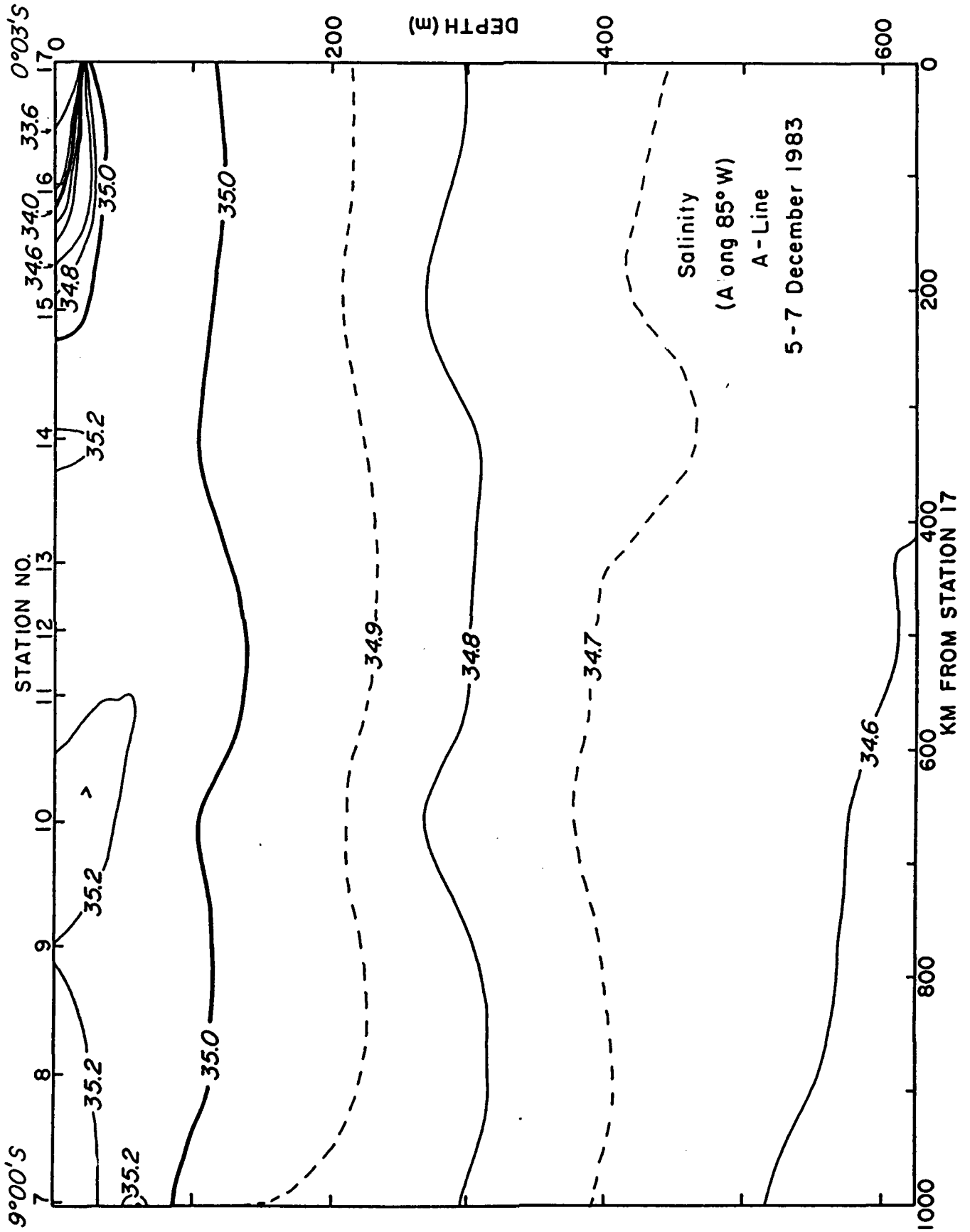

5°01'S
STATION NO.
37
36
35
34
33
32
31
21
0°00'
30
29
22
24
28
2°00'N
0
23
20
17
16
16
15
14
13
200
12
11
10
DEPTH (m)
400
9
8
Temperature (°C)
(along 95° W)
G - Line
12-14 December 1983
600
7
7
800
600
400
200
0
KM. FROM STATION 28

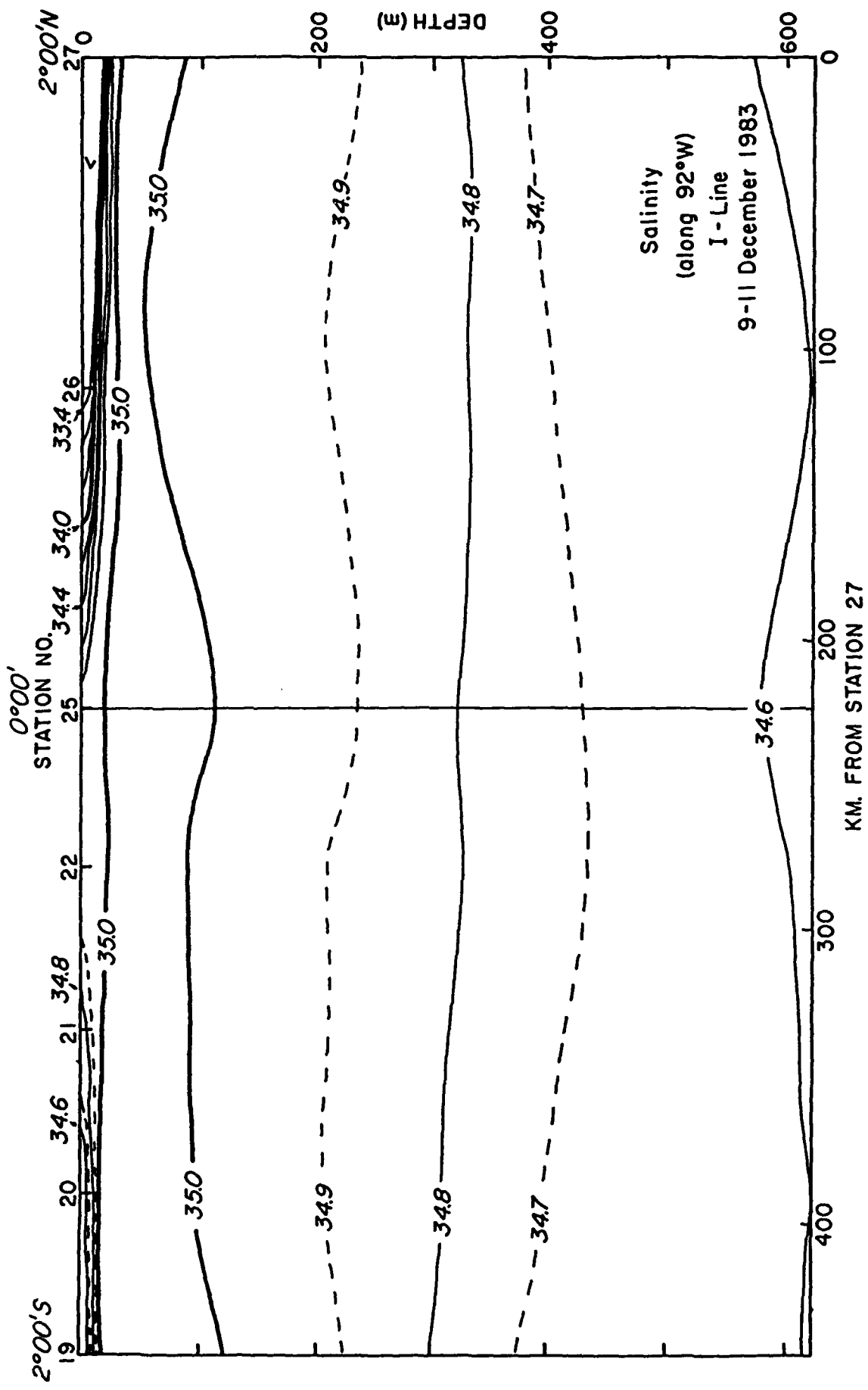

DEPTH (m)
0
200
400
600
STATION NO.
37
38
39
40
41
42
43
44
45
46
47
48
49
50
20
22
23
24
24
23
17
18
16
15
14
13
12
11
10
9
8
7
Temperature (°C)
(along 5°S)
B-Line
14-18 December 1983
0
400
800
1200
1600
KM. FROM SHORE

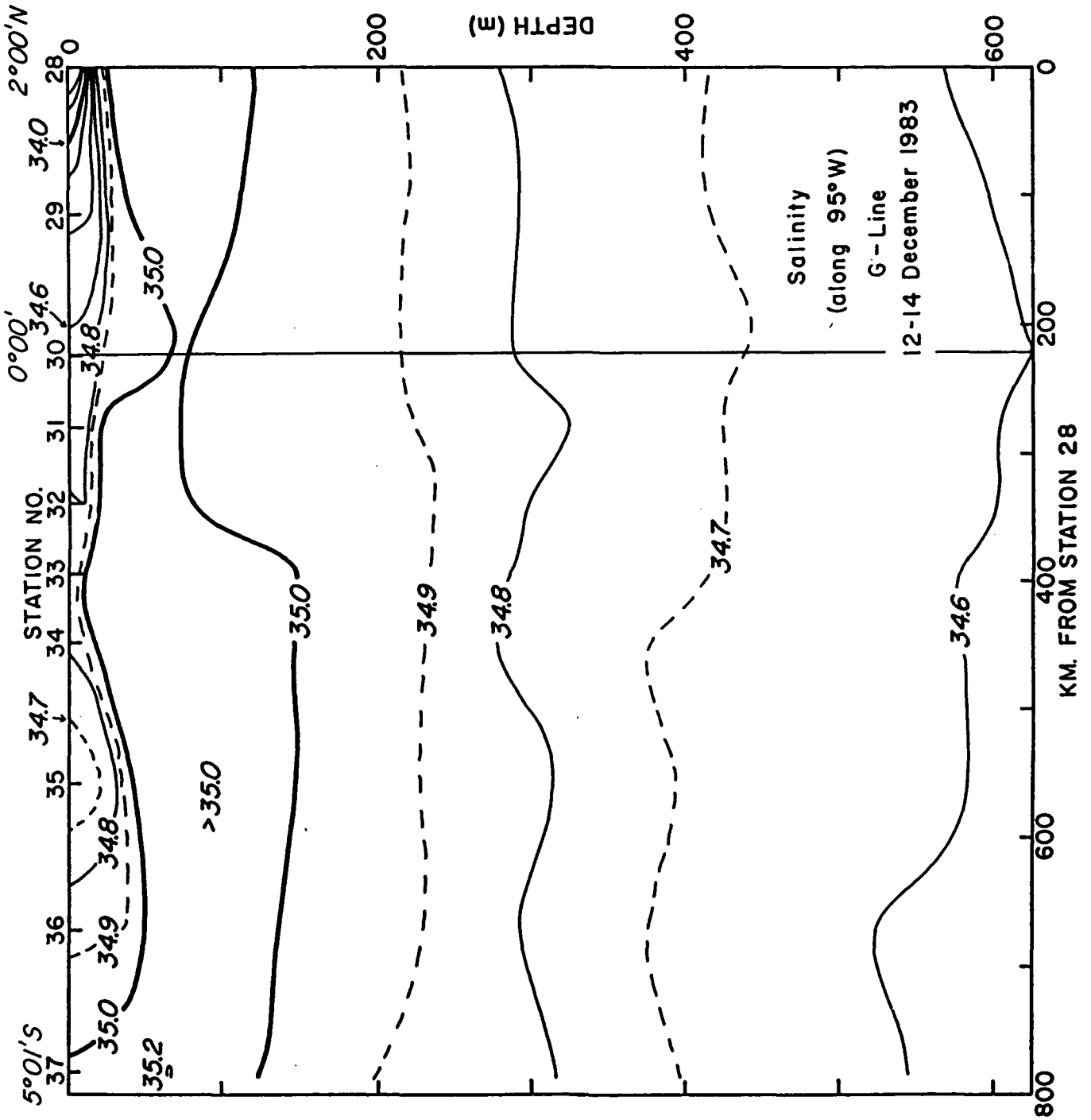

DEPTH (m)
0
200
400
600
STATION NO.
43
44
45
46
47
48
49
50
18
19
20
21
22
23
KM. FROM SHORE
0
100
200
300
400
Temperature (°C)
(along 5° S)
B - Line
16-18 December 1983
7
8
9
10
11
12
13
14
15
16
17

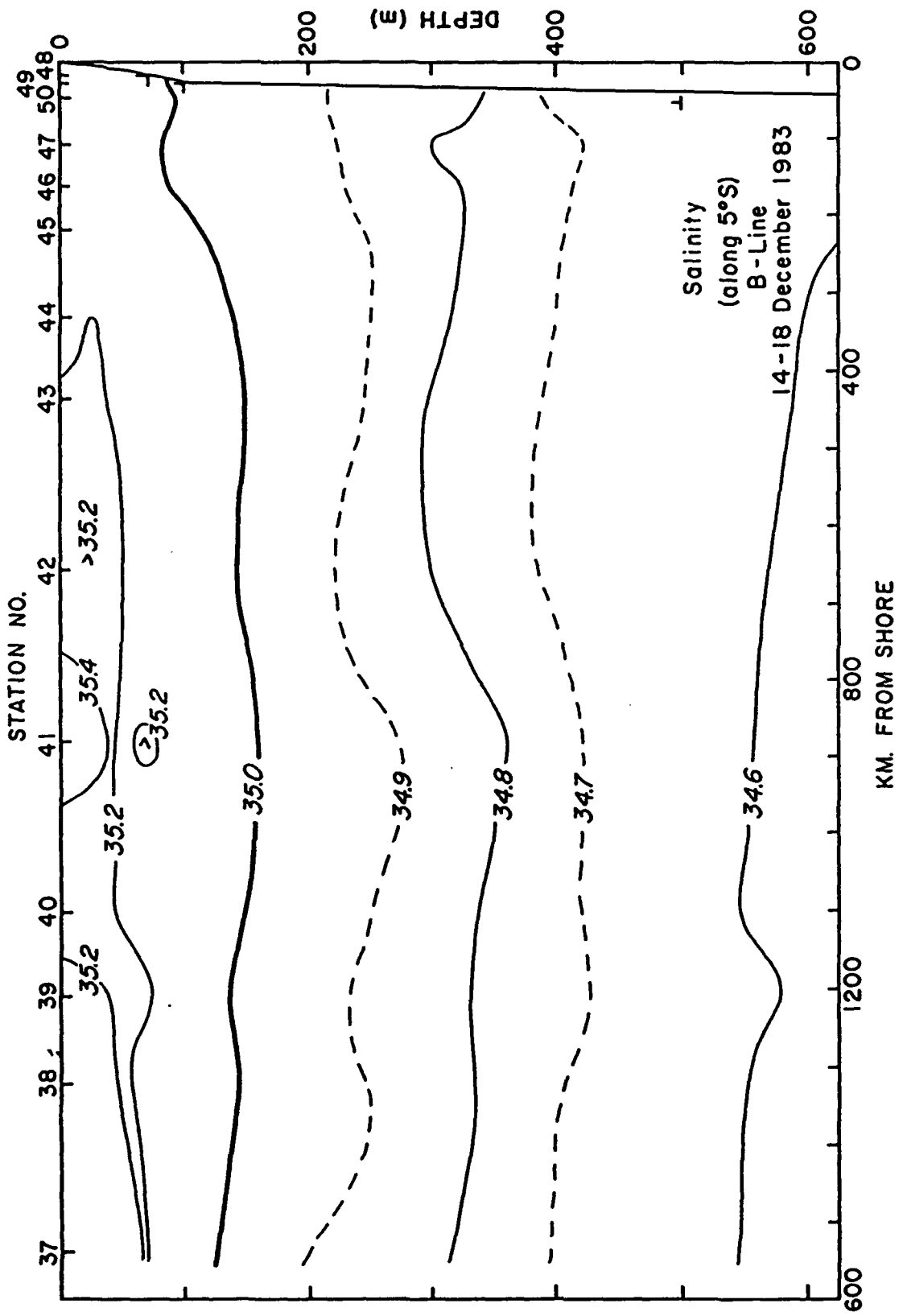

DEPTH (m)
0
200
400
600
STATION NO.
51
52
53
54
55
KM. FROM SHORE
0
100
200
Temperature (°C)
Chimbote
D-Line
19 December 1983
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7

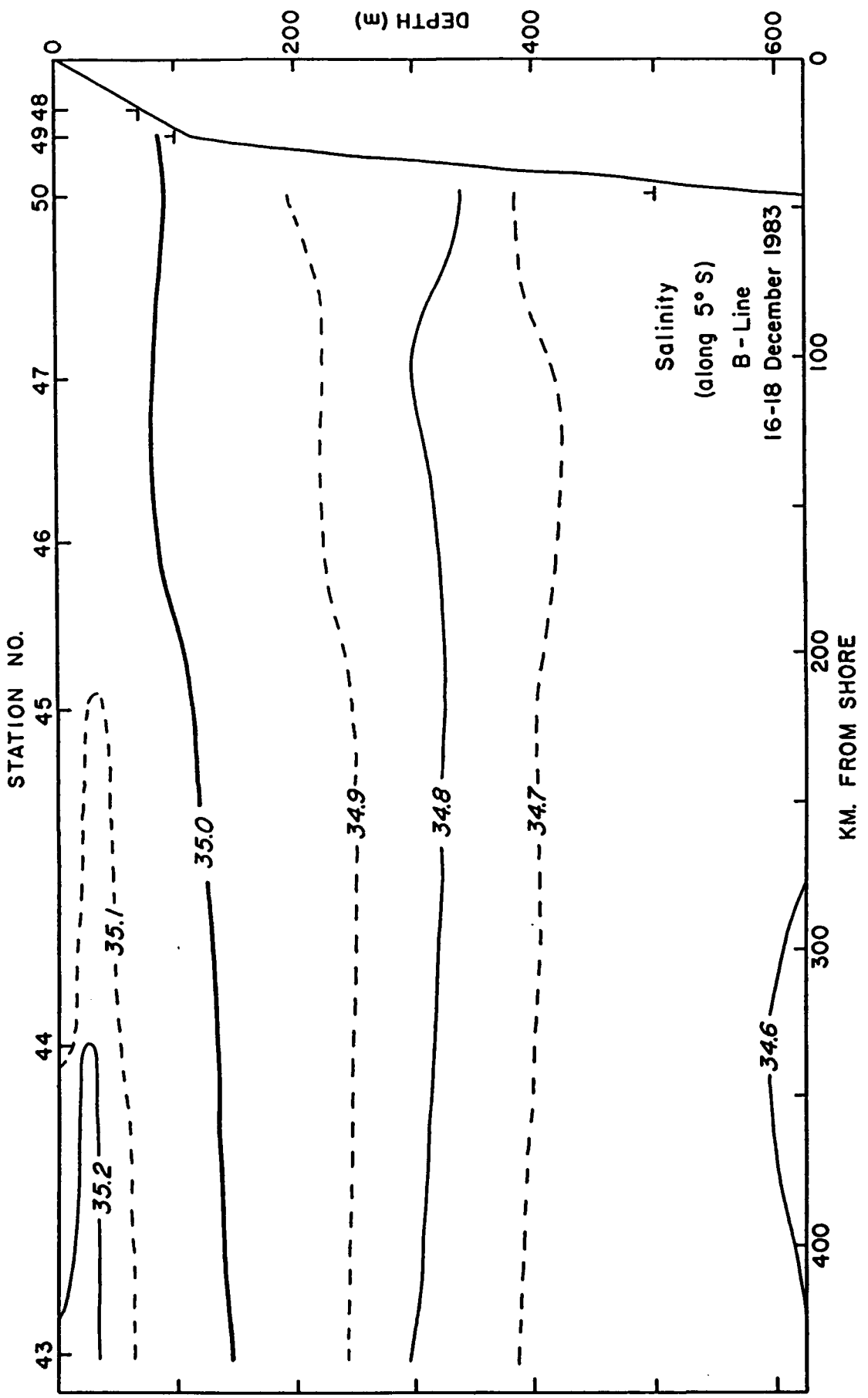

DEPTH (m)
0
200
400
600
STATION NO.
1
2
3
4
5
6
KM FROM STATION 1
0
200
400
600
Salinity
(along 10°30'S)
3-4 December 1983
35.5
35.4
35.2
35.0
34.9
34.8
34.7
34.6

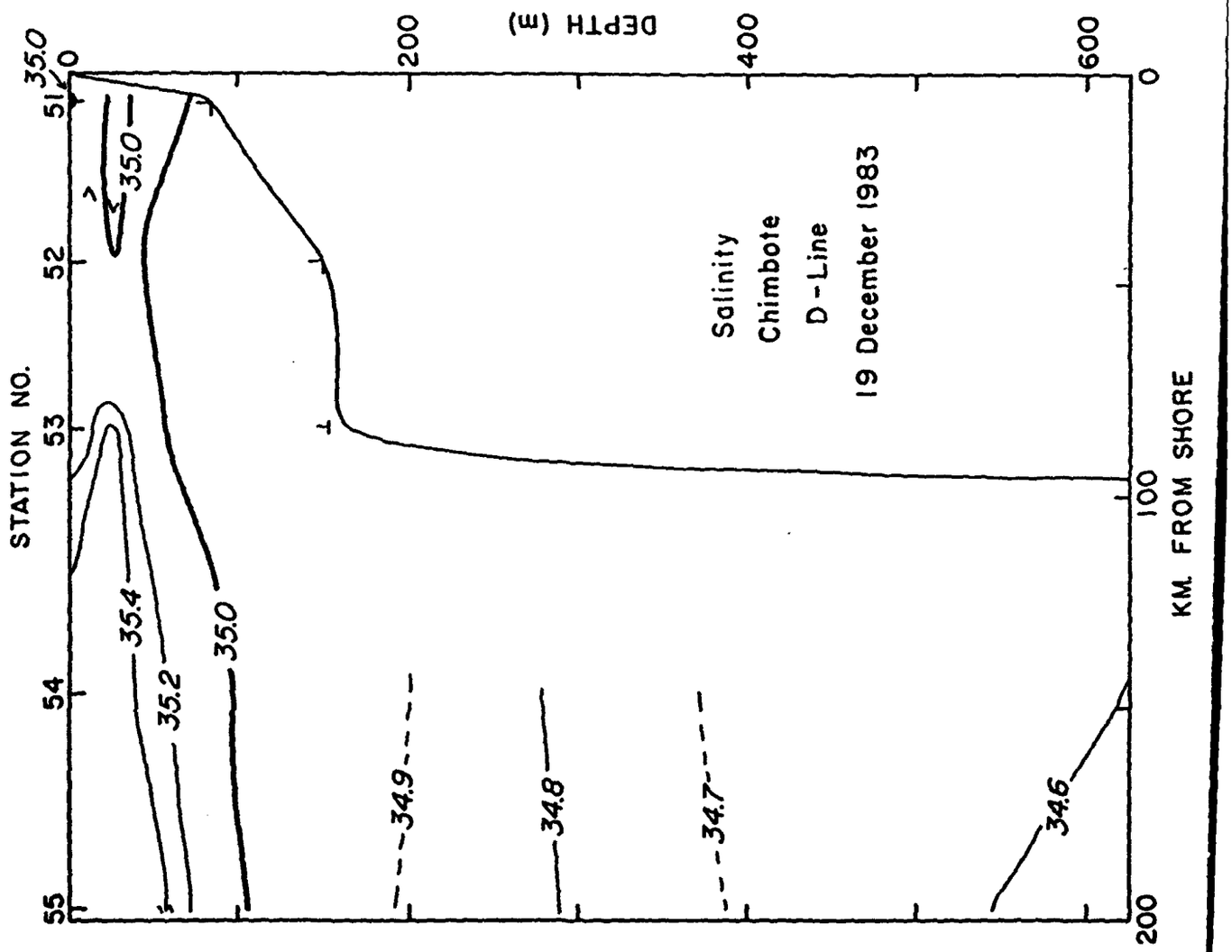

Salinity
(Along 85° W)
A-Line
5-7 December 1983
DEPTH (m)
KM FROM STATION 17
STATION NO.
0°03'S
9°00'S
33.6
34.0
34.6
34.8
35.0
35.2
34.9
34.7
34.6

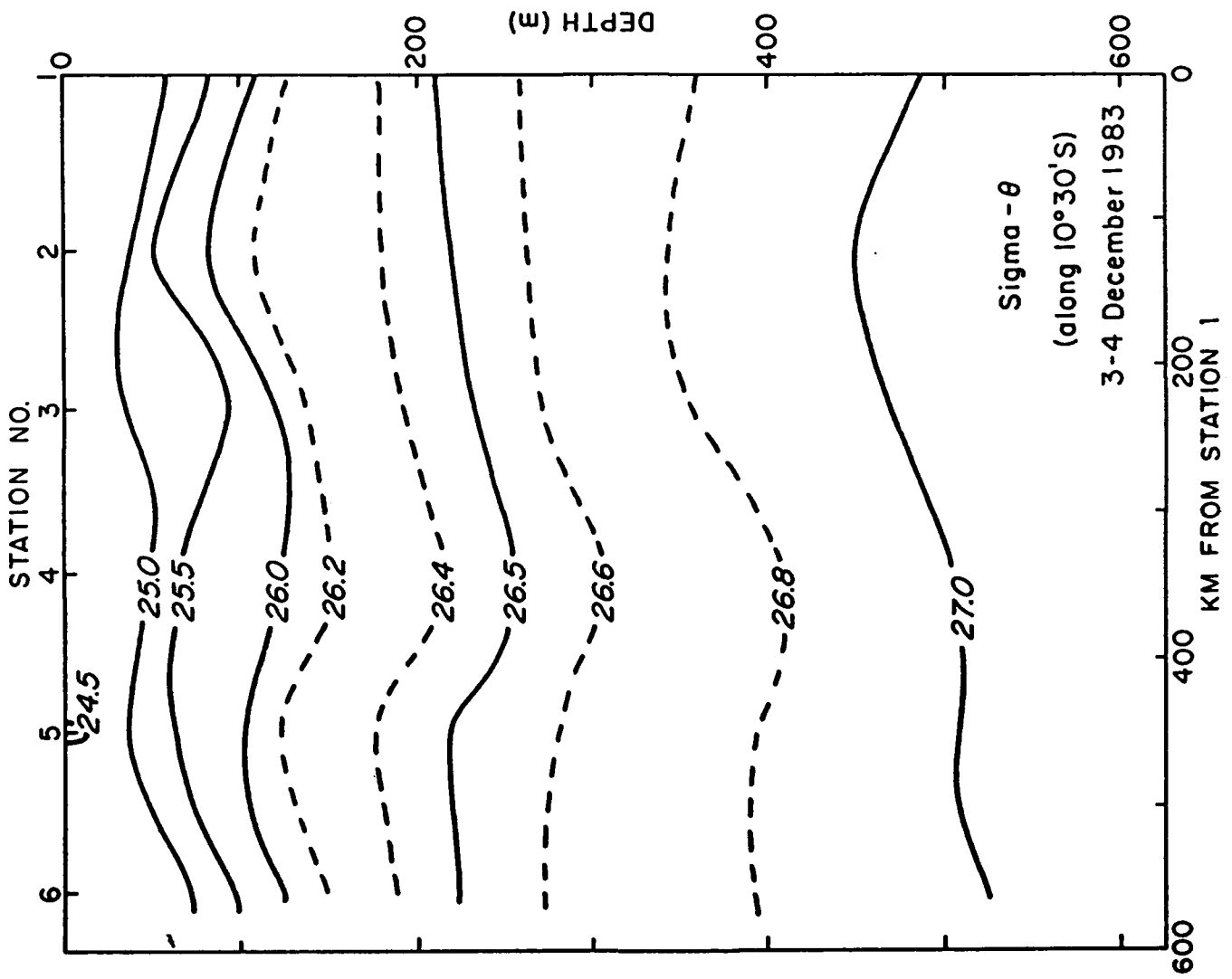

Salinity
(along 92°W)
I - Line
9-11 December 1983
DEPTH (m)
KM. FROM STATION 27
STATION NO.
2°00'N
0°00'
2°00'S
350
34.9
34.8
34.7
34.6
34.4
34.0
33.4

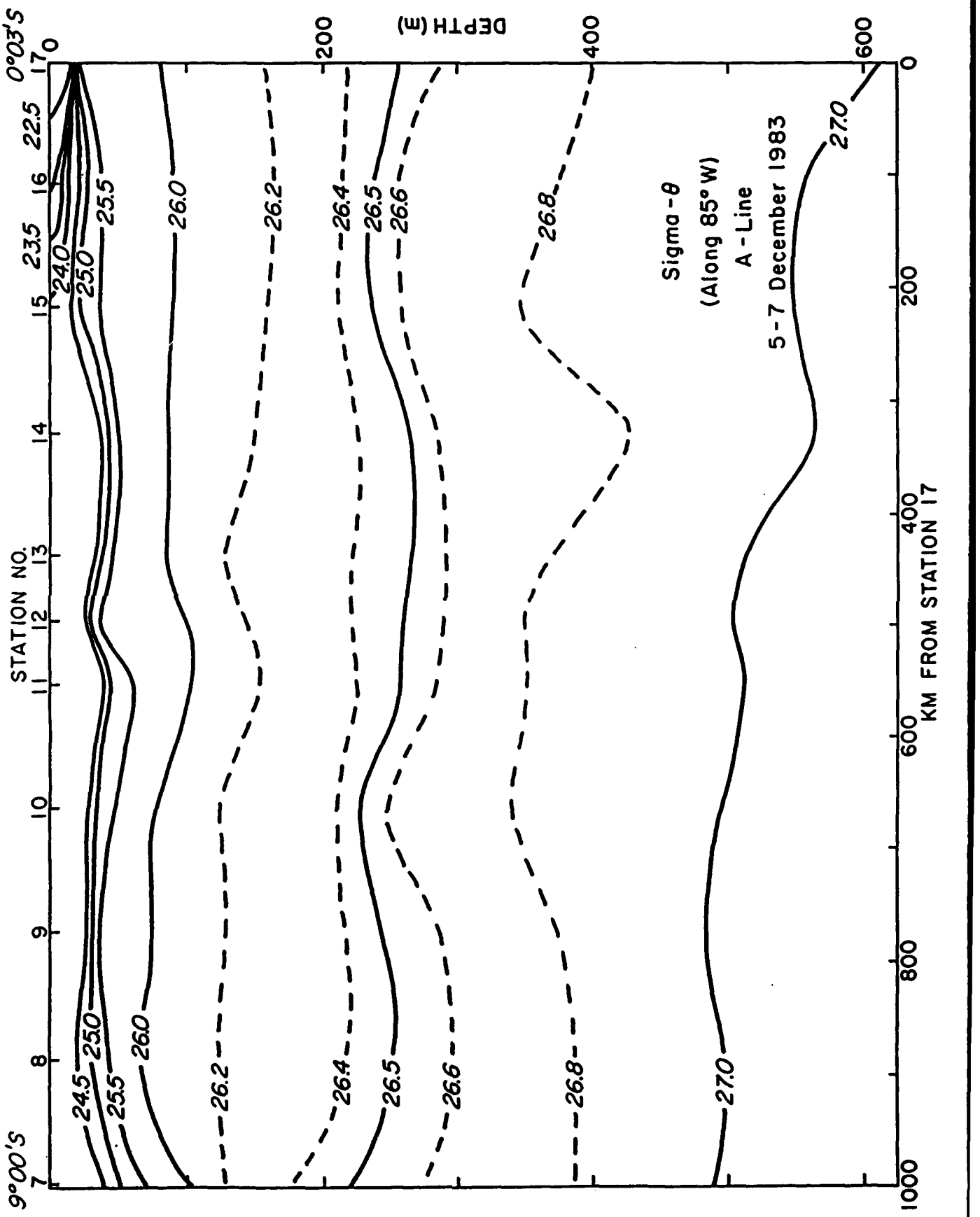

Salinity
(along 95°W)
G-Line
12-14 December 1983
DEPTH (m)
KM. FROM STATION 28
STATION NO.
2°00'N
0°00'
5°01'S
>35.0
35.0
34.9
34.8
34.7
34.6
35.2

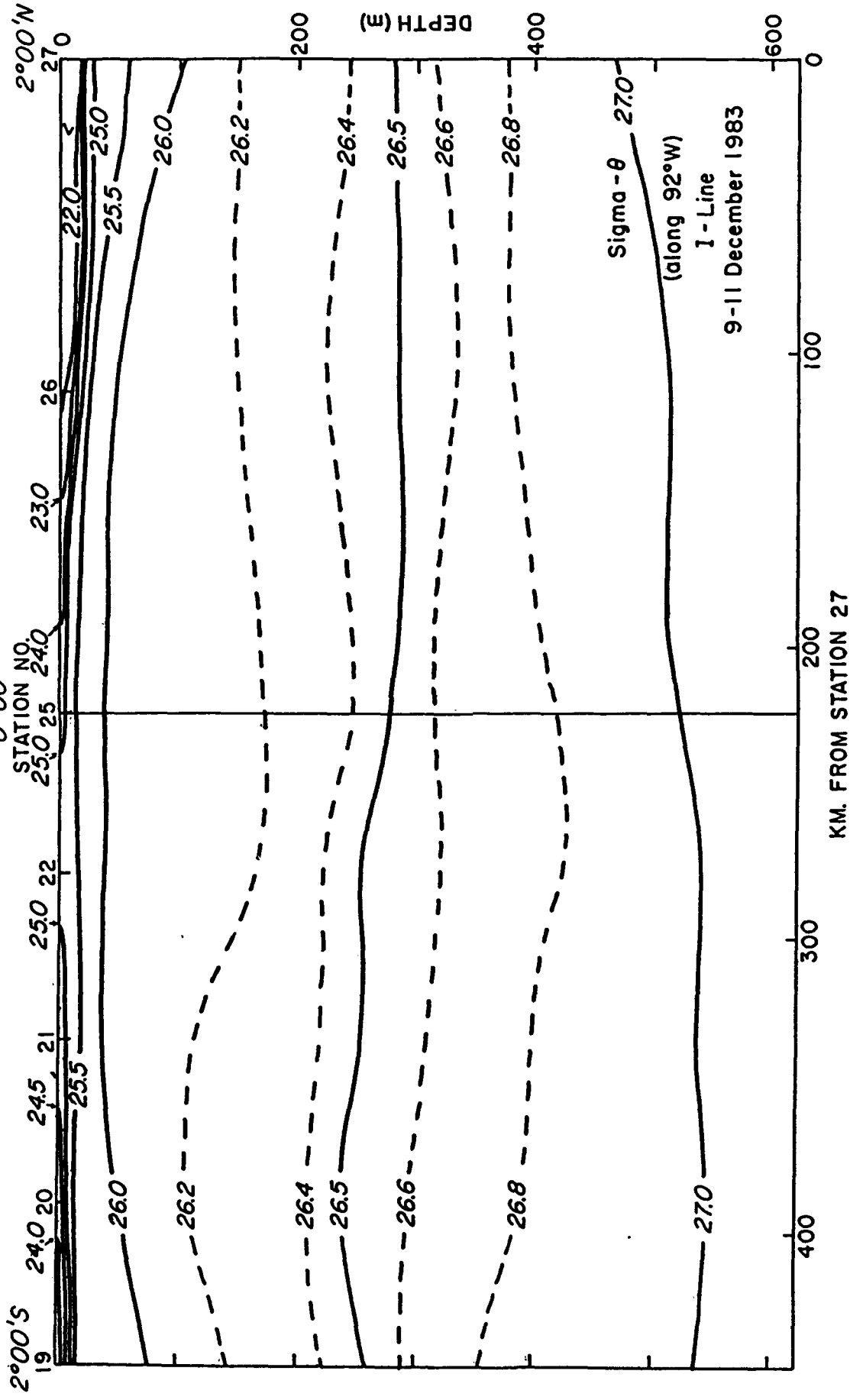

DEPTH (m)
0
200
400
600
STATION NO.
37
38
39
40
41
42
43
44
45
46
47
48
49
50
0
400
800
1200
1600
KM. FROM SHORE
Salinity
(along 5°S)
B-Line
14-18 December 1983
>35.2
35.4
≥35.2
35.2
35.2
35.0
34.9
34.8
34.7
34.6

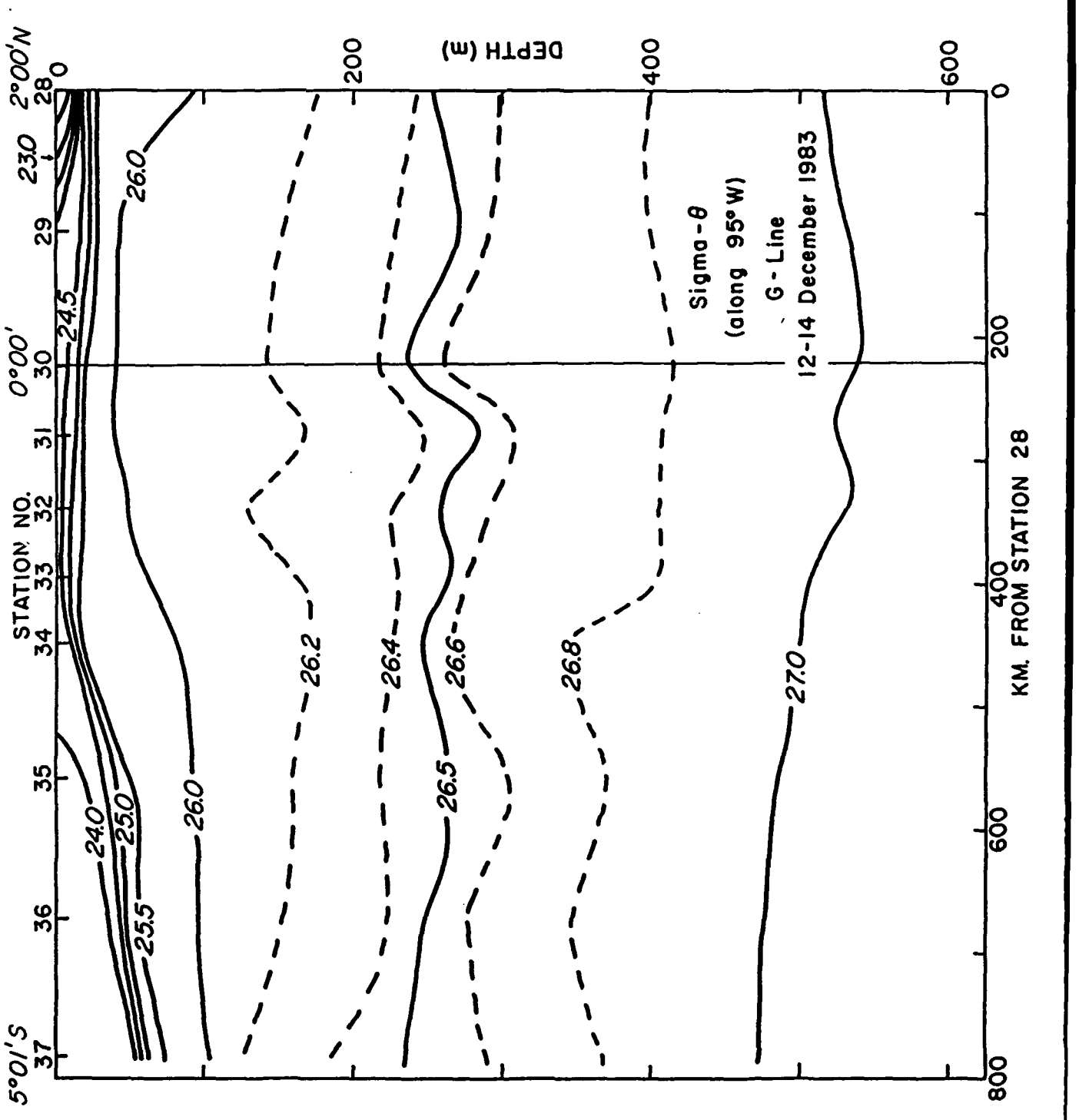

DEPTH (m)
0
200
400
600
STATION NO.
43
44
45
46
47
50
49
48
0
100
200
300
400
KM. FROM SHORE
Salinity
(along 5° S)
B-Line
16-18 December 1983
35.2
35.1
35.0
34.9
34.8
34.7
34.6

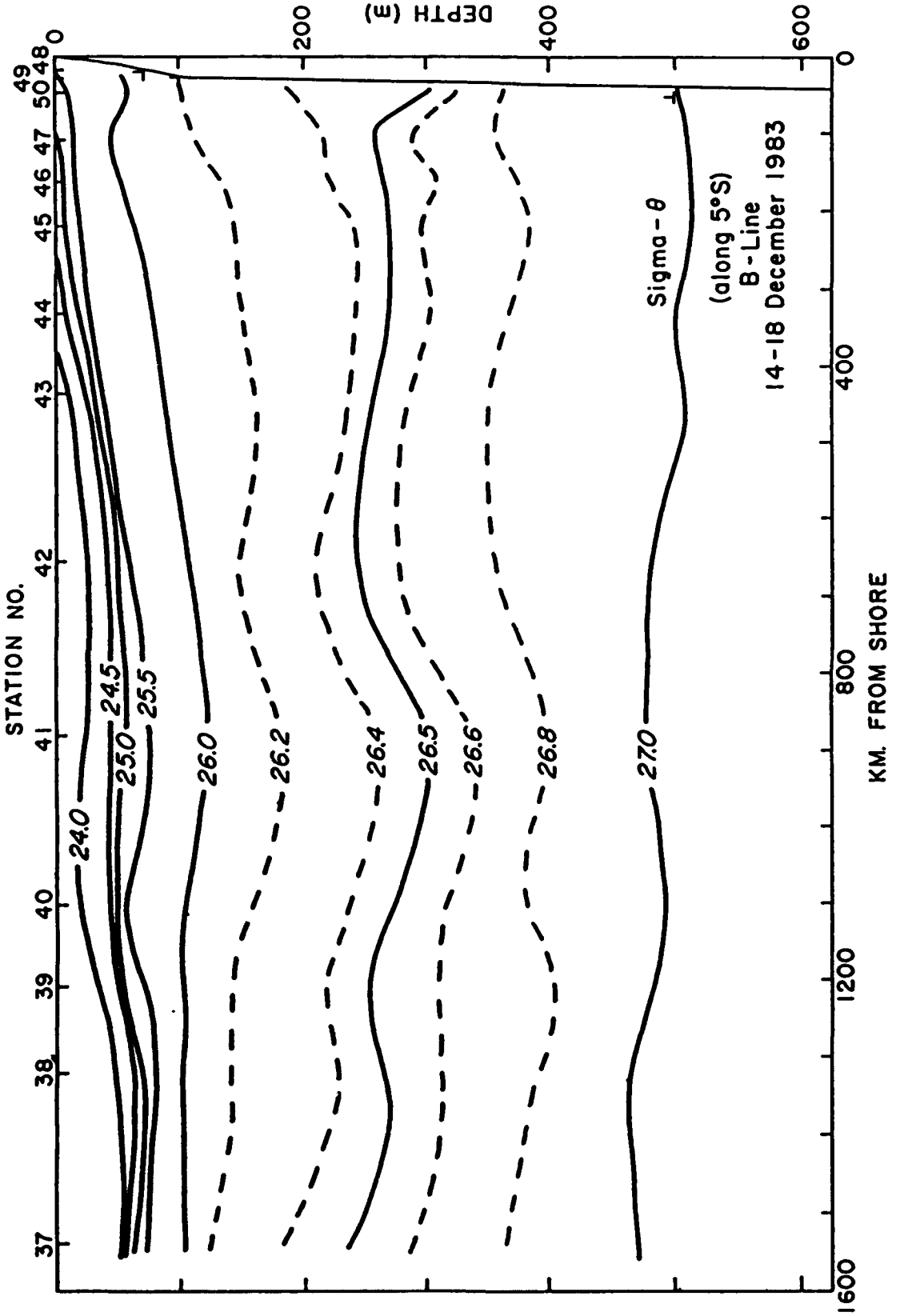

Salinity
Chimbote
D-Line
19 December 1983
DEPTH (m)
0
200
400
600
STATION NO.
51
52
53
54
55
KM. FROM SHORE
0
100
200
35.0
35.0
35.4
35.2
35.0
34.9
34.8
34.7
34.6

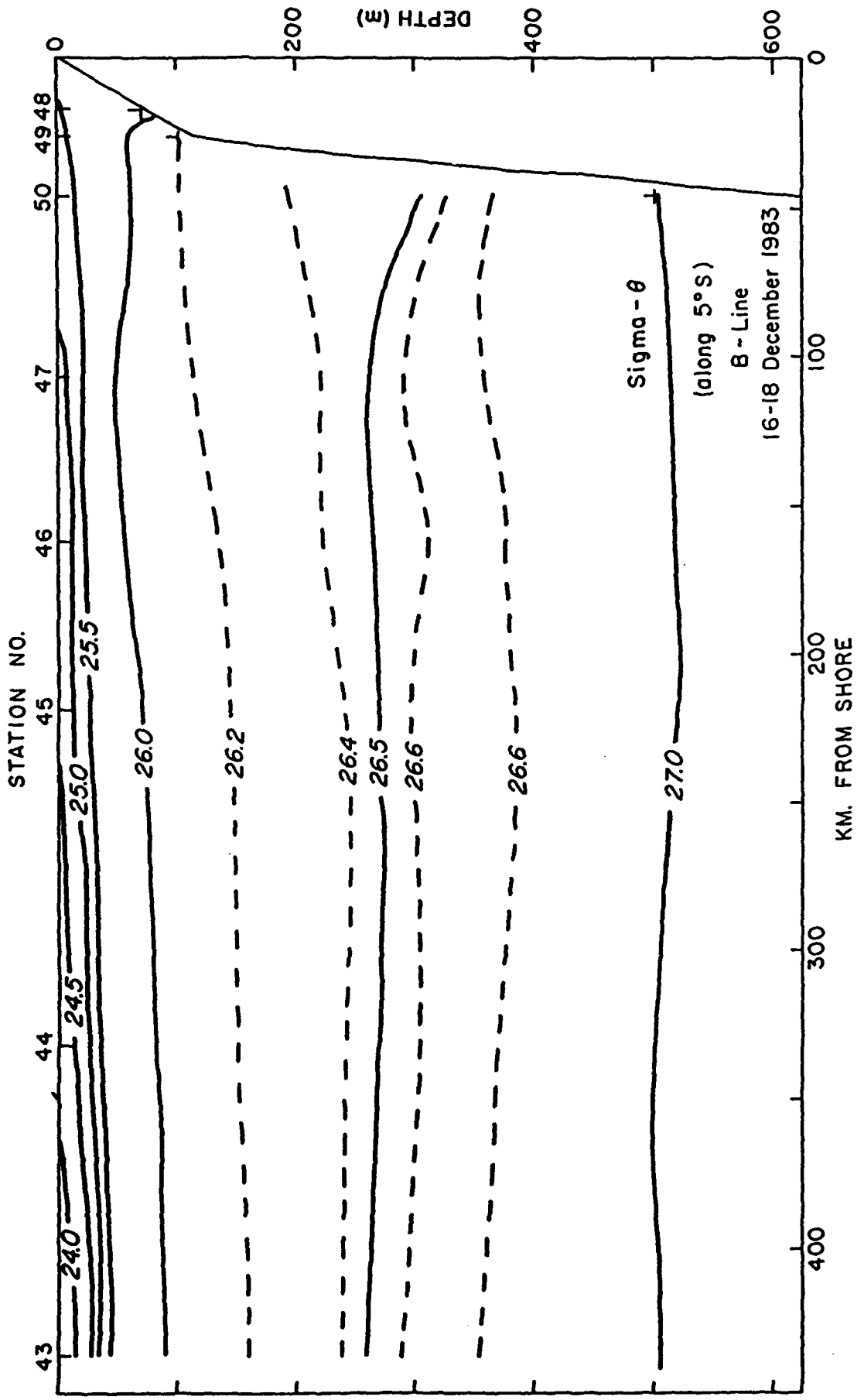

STATION NO.
1
2
3
4
5
6
DEPTH (m)
0
200
400
600
KM FROM STATION 1
0
200
400
600
Sigma - θ
(along 10°30'S)
3-4 December 1983
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0

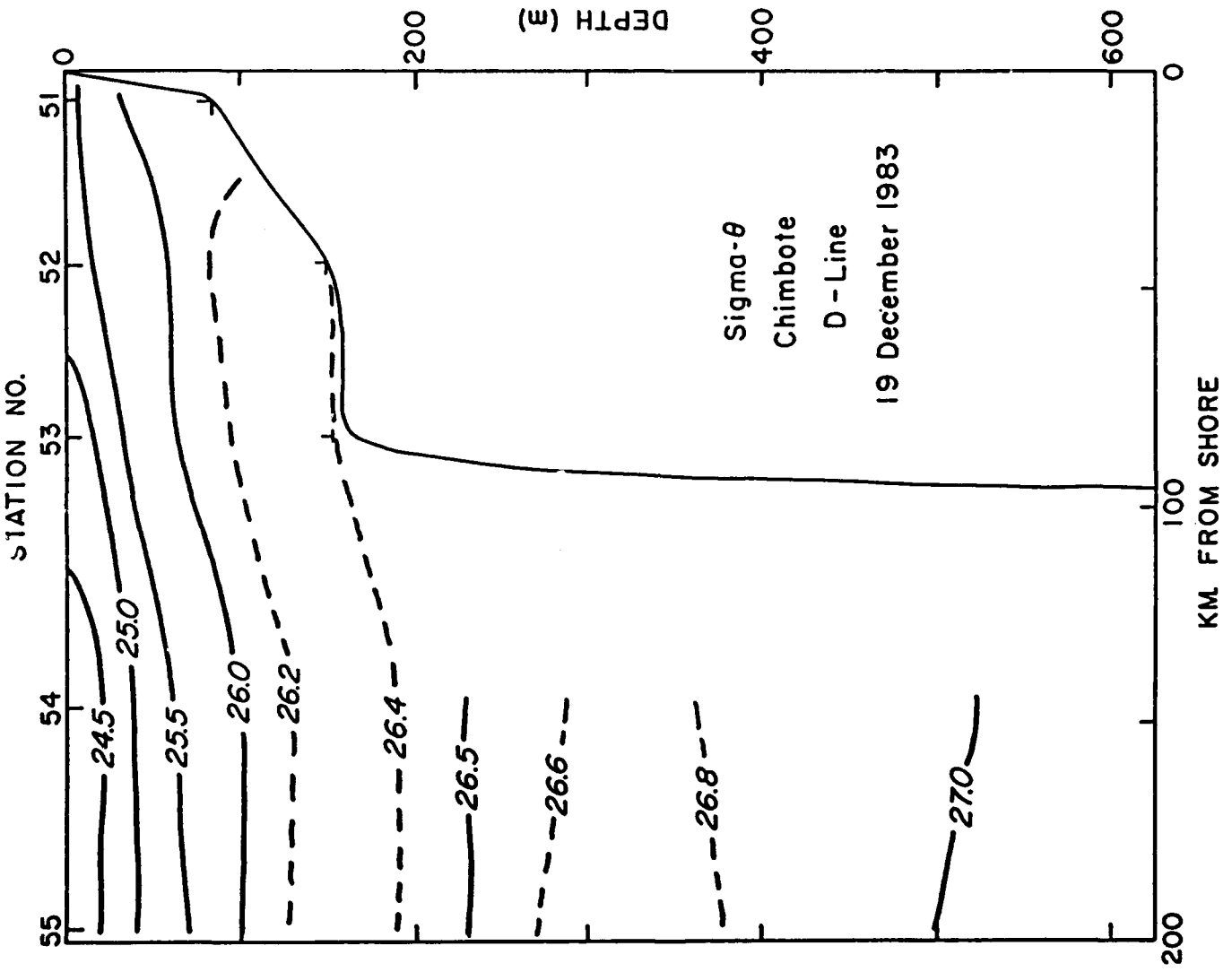

0°03'S
9°00'S
STATION NO.
7
8
9
10
11
12
13
14
15
16
17
DEPTH (m)
0
200
400
600
800
1000
KM FROM STATION 17
Sigma-θ
(Along 85° W)
A-Line
5-7 December 1983
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0

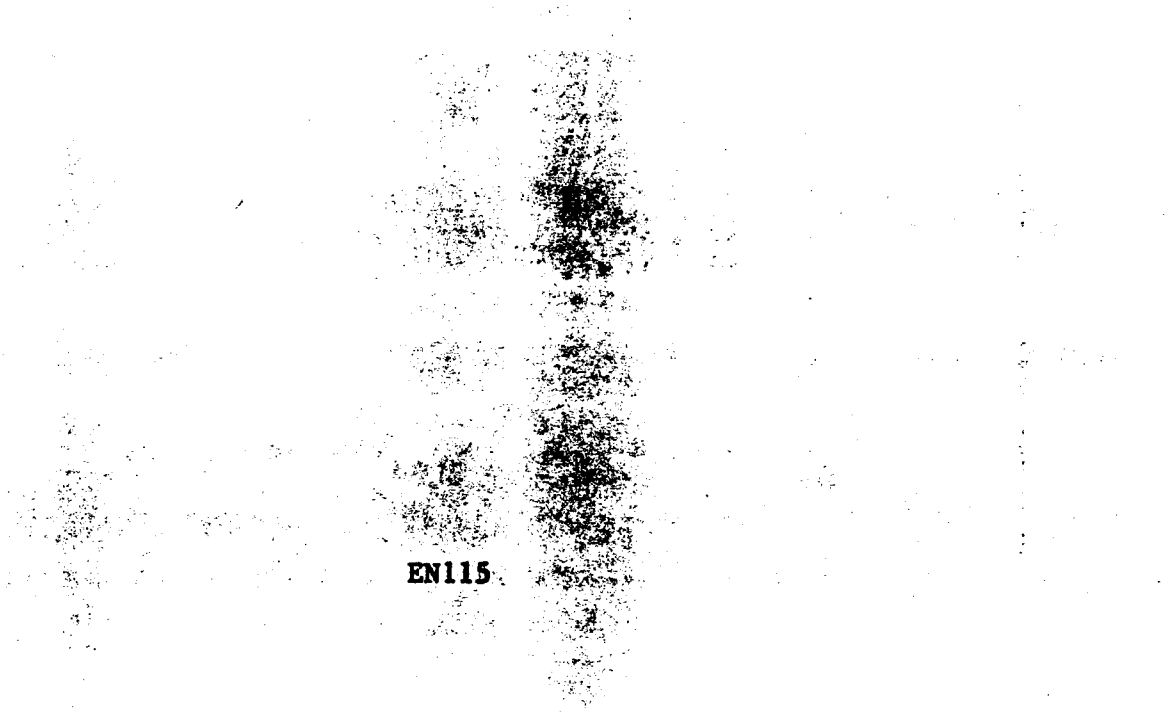

Sigma-θ
(along 92°W)
I-Line
9-11 December 1983
DEPTH (m)
KM. FROM STATION 27
STATION NO.
2°00'N
0°00'
2°00'S
0
200
400
600
100
300
27.0
26.8
26.6
26.5
26.4
26.2
26.0
25.5
25.0
24.5
24.0
23.0
22.0


Sigma-θ
(along 95° W)
G - Line
12-14 December 1983
DEPTH (m)
KM. FROM STATION 28
STATION NO.
5°01'S
0°00'
2°00'N
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0


DEPTH (m)
0
200
400
600
STATION NO.
49
48
50
47
46
45
44
43
42
41
40
39
38
37
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
Sigma-θ
(along 5°S)
B-Line
14-18 December 1983
0
400
800
1200
1600
KM. FROM SHORE


DEPTH (m)
0
200
400
600
STATION NO.
43
44
45
46
47
48
49
50
0
100
200
300
400
KM. FROM SHORE
Sigma - θ
(along 5° S)
B - Line
16-18 December 1983
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.6
27.0


DEPTH (m)
0
200
400
600
STATION NO.
51
52
53
54
55
Sigma-θ
Chimbote
D-Line
19 December 1983
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
0
100
200
KM FROM SHORE


EN115

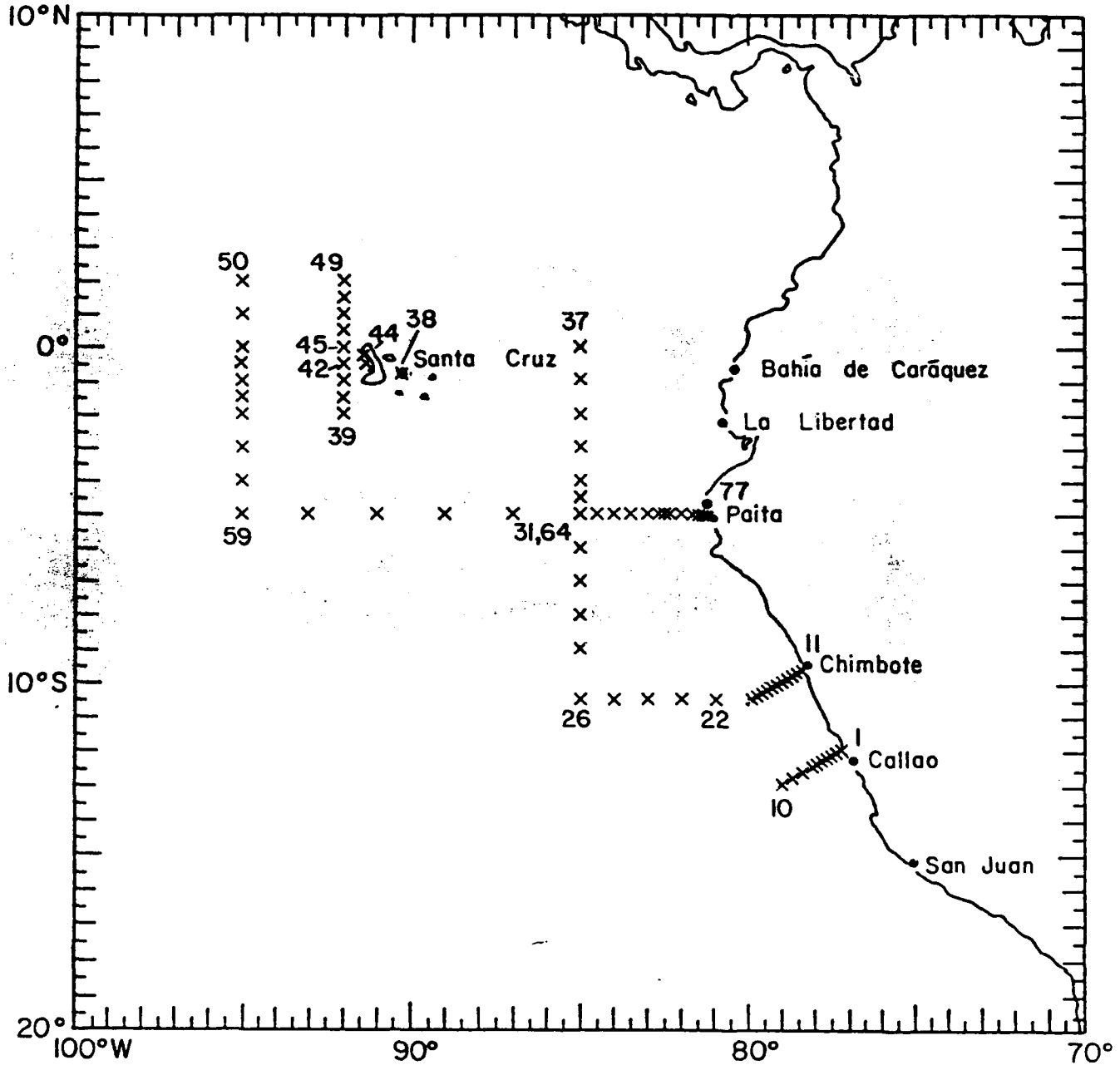


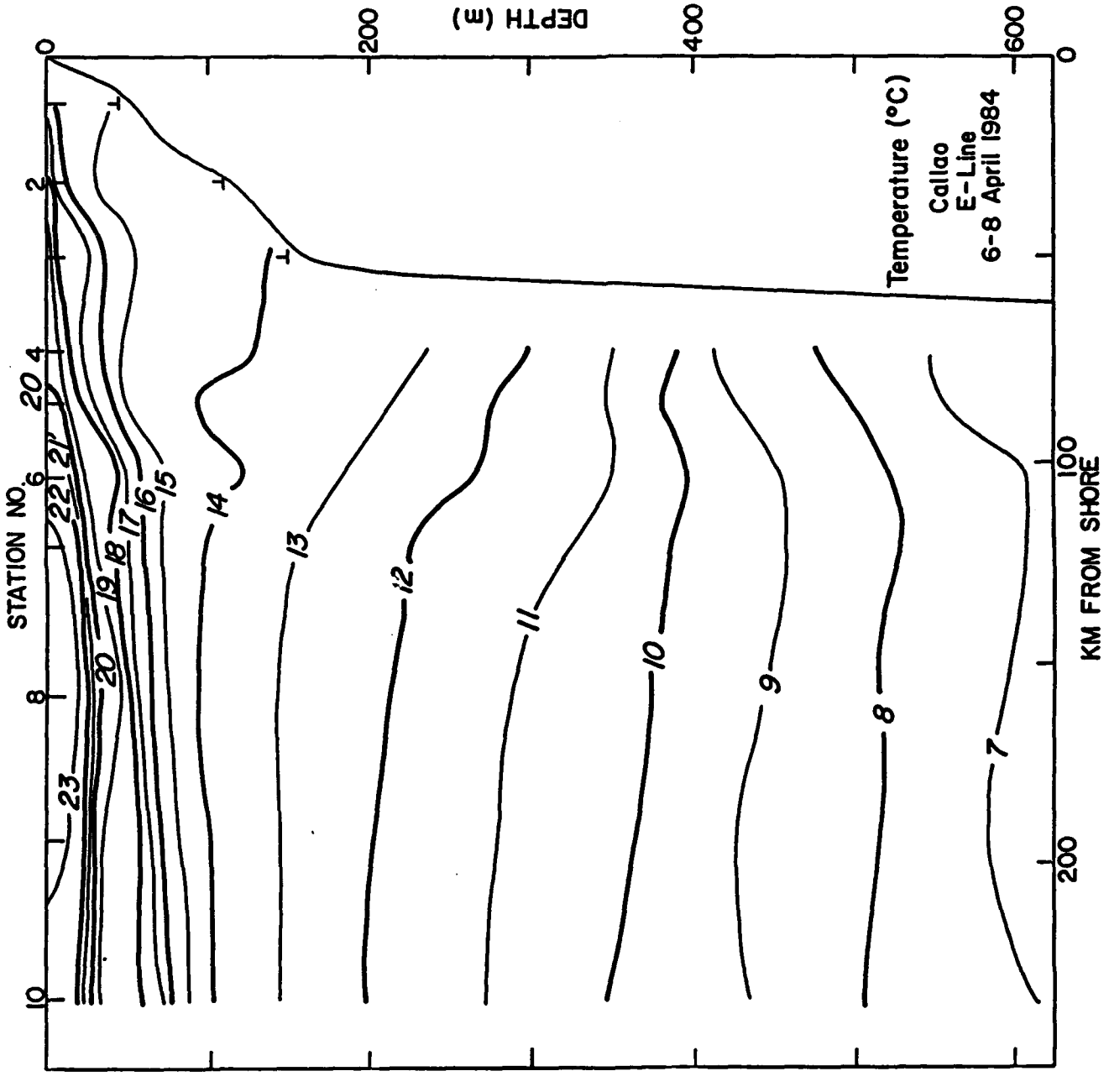
Figure 5. Location of CTD stations during EN115, 6-26 April 1984.

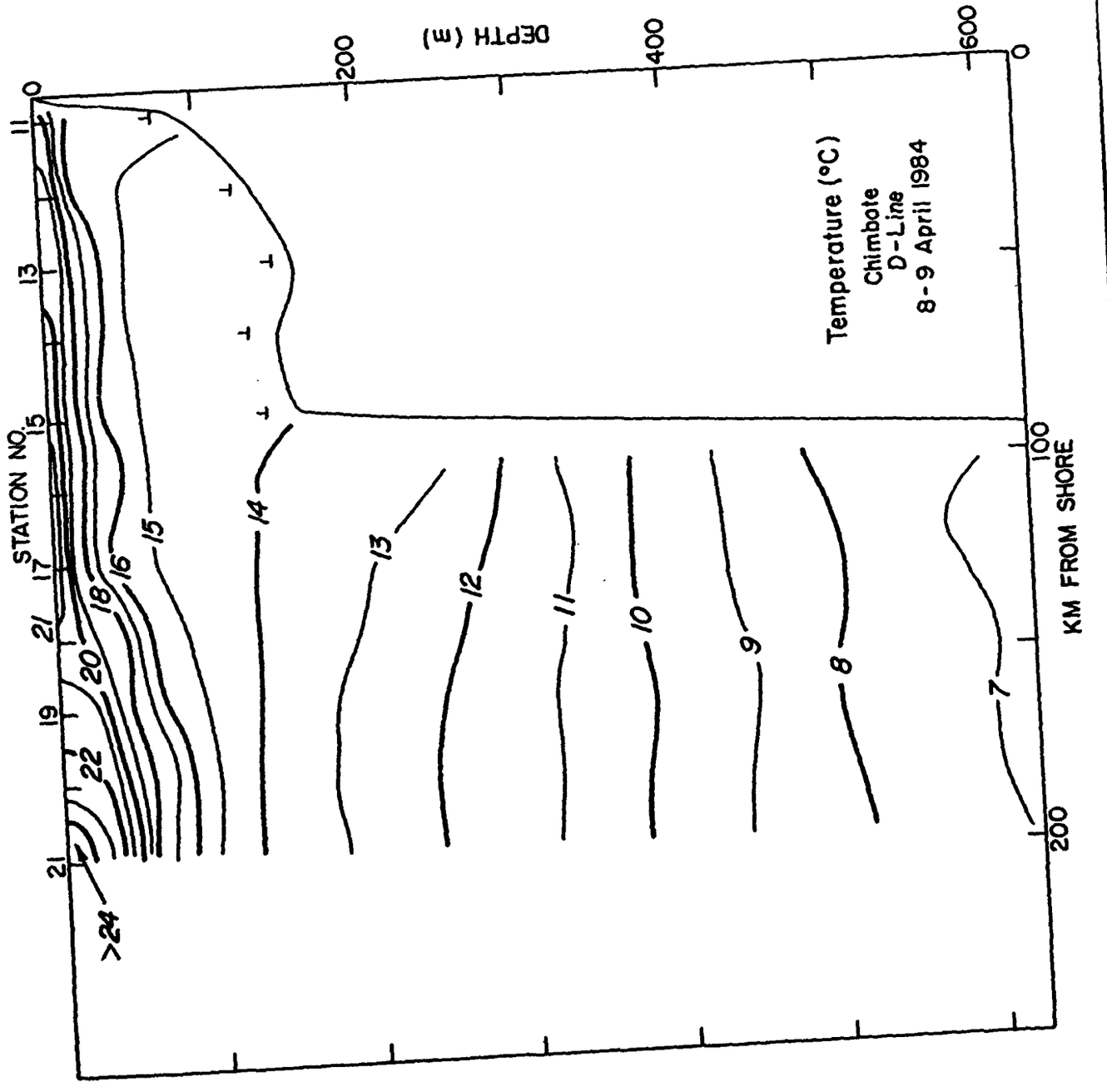
Table 6. List of stations occupied during EN115 showing date, time, location, wind speed and direction and atmospheric pressure.

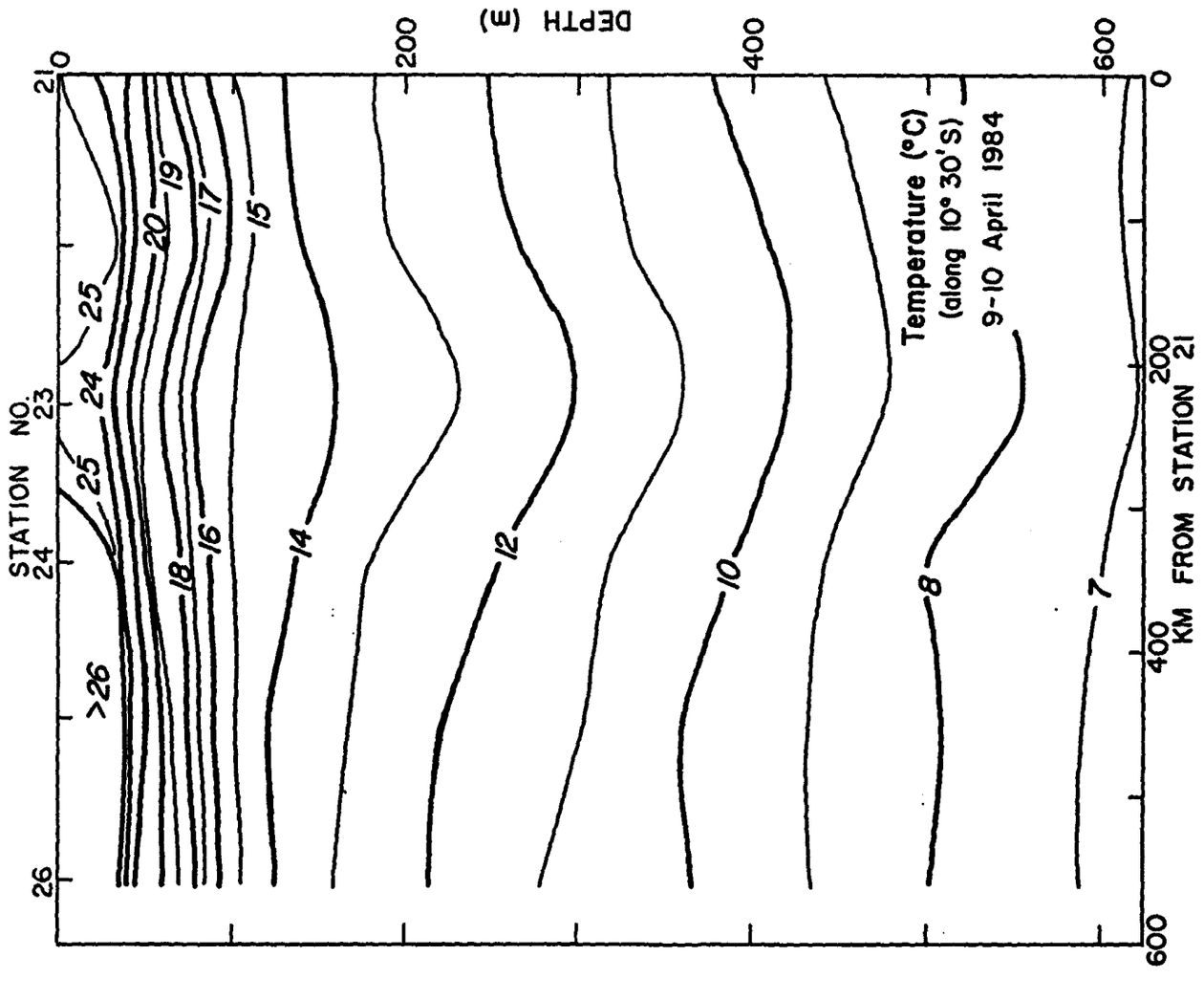
Date		Time	Station No.	Name	Location Lat.	Long.	Wind Dir. (°T)	Spd. (kts)	Pressure (mb)
Apr.	6	2349	1	E-1	11°59.6'S	77°13.8'W	180	5	1014.0
Apr.	7	0211	2	E-2	12°05.2'S	77°23.0'	160	7	1014.8
	7	0358	3	E-3	12°10.1'S	77°32.0'	155	10	1014.9
	7	0819	4	E-4	12°14.8'S	77°44.0'	155	8	1014.0
	7	1138	5	E-5	12°19.6'S	77°49.2'	155	12	1015.0
	7	1424	6	E-6	12°24.8'S	77°57.8'	160	11	1015.8
	7	1623	7	E-7	12°29.9'S	78°05.8'	125	12	
	7	2037	8	E-8	12°39.7'S	78°23.8'	160	12	1013.0
	7	2338	9	E-9	12°49.6'S	78°41.2'	155	10	1016.0
Apr.	8	0257	10	E-10	13°00.0'S	79°00.0'	160	12	1016.5
	8	2159	11	D-1	9°39.8'S	78°23.9'	130	6	1011.0
	8	2245	12	D-2	9°45.2'S	78°32.9'	140	6	1012.0
Apr.	9	0010	13	D-3	9°49.5'S	78°42.2'	135	5	1012.0
	9	0142	14	D-4	9°55.2'S	78°50.5'	150	6	1015.8
	9	0305	15	D-5	10°00.2'S	79°00.1'	165	7	1013.4
	9	0452	16	D-6	10°05.1'S	79°08.9'	150	6	1013.8
	9	0720	17	D-7	10°10.0'S	79°17.8'	135	5	1013.3
	9	0858	18	D-8	10°14.9'S	79°26.8'	100	5	1013.0
	9	1132	19	D-9	10°20.0'S	79°35.7'	90	5	1014.0
	9	1316	20	D-10	10°24.8'S	79°44.8'	80	5	1015.8
	9	1522	21	D-11	10°29.9'S	79°54.1'	140	8	1015.6
	9	2140	22	S-22	10°31.2'S	80°58.8'	140	12	1015.8
Apr.	10	0351	23	S-23	10°30.1'S	81°59.3'	125	12	1014.8
	10	1007	24	S-24	10°29.9'S	82°59.6'	100	11	1014.0
	10	1634	25	S-25	10°30.7'S	83°59.1'	115	11	1015.2
	10	2306	26	S-26	10°30.1'S	84°59.4'	140	12	1013.0
Apr.	11	0754	27	S-27	9°00.1'S	85°00.2'	110	12	1017.5
	11	1413	28	S-28	8°00.4'S	84°59.9'	120	12	1014.8
	11	2031	29	A-21	7°00.1'S	85°00.2'	135	6	1012.5
Apr.	12	0301	30	A-19	6°00.2'S	85°00.2'	150	5	1014.5
	12	0852	31	A-17	5°00.0'S	85°00.3'	115	9	1014.0
	12	1250	32	A-16	4°30.0'S	85°00.0'	130	10	1014.2
	12	1556	33	A-15	4°00.1'S	84°59.9'	130	13	1014.8
	12	2139	34	A-13	2°59.8'S	85°00.0'	120	7	1011.4
Apr.	13	0350	35	A-11	2°00.4'S	84°59.8'	120	4	1014.5
	13	0958	36	A-9	0°57.8'S	85°00.3'	140	9	1013.0
	13	1547	37	A-7	0°00.0'	85°00.4'	170	6	1015.1
	13	2100	XBT2	G-1	0°04.8'S	85°48.4'	200	2	
Apr.	14	0100	XBT3	G-3	0°13.1'S	86°35.6'	180	8	1011.0
	14	0639	XBT4	G-4	0°27.0'S	87°45.8'	180	10	1016.0
	14	0900	XBT5	G-5	0°30.2'S	88°17.4'	190	8	1014.0
	14	1300	XBT6	G-6	0°36.9'S	89°11.5'	180	10	1014.0
	14	1700	XBT7	G-7	0°44.3'S	90°04.1'	185	5	1015.0
Apr.	15	0635	38	S-38	0°47.3'S	90°17.1'	135	3	1017.0
	15	1741	39	S-39	2°00.2'S	91°59.8'	135	5	1012.8
	15	2128	40	S-40	1°30.9'S	92°00.7'	55	4	1010.0

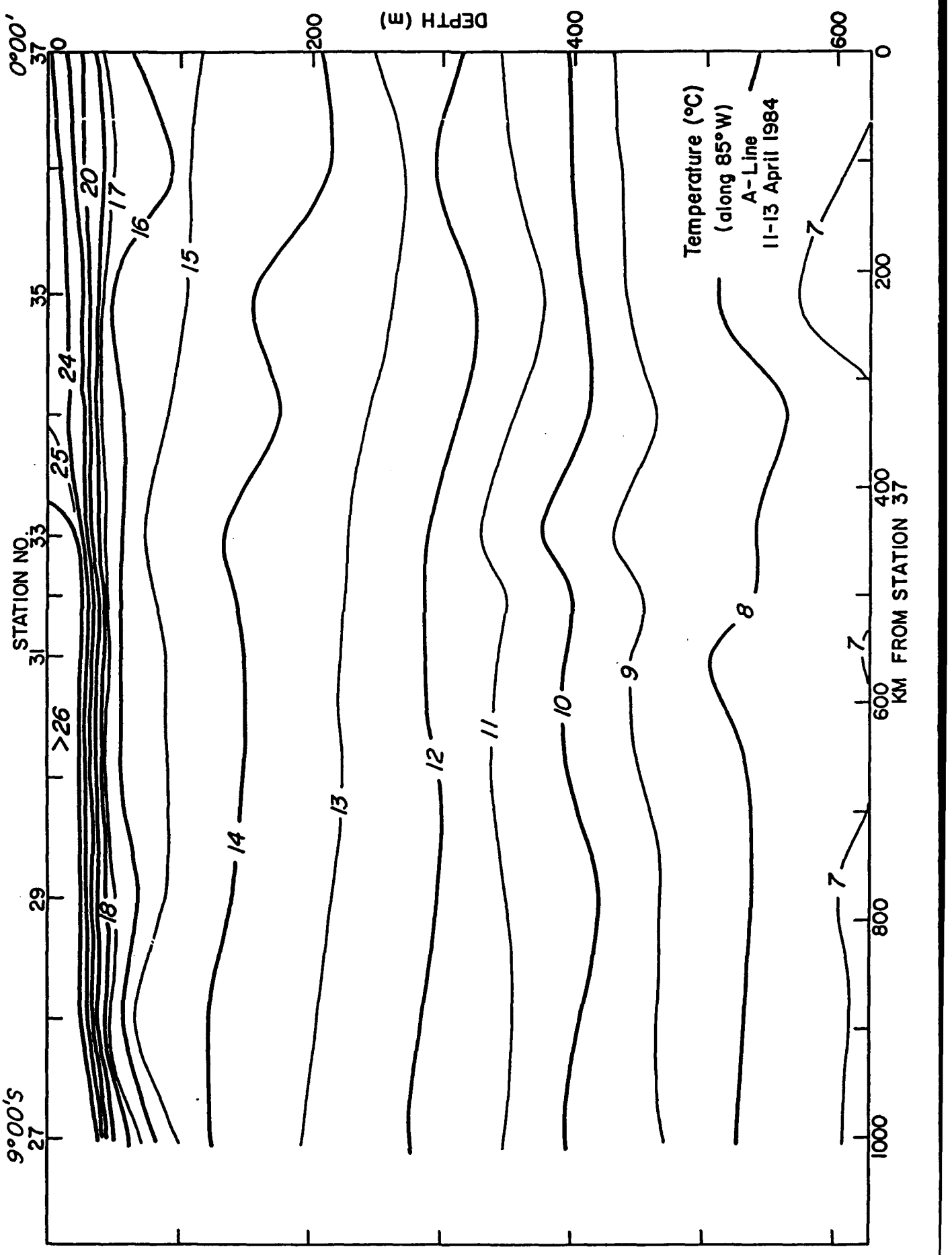
Table 6 cont'd.

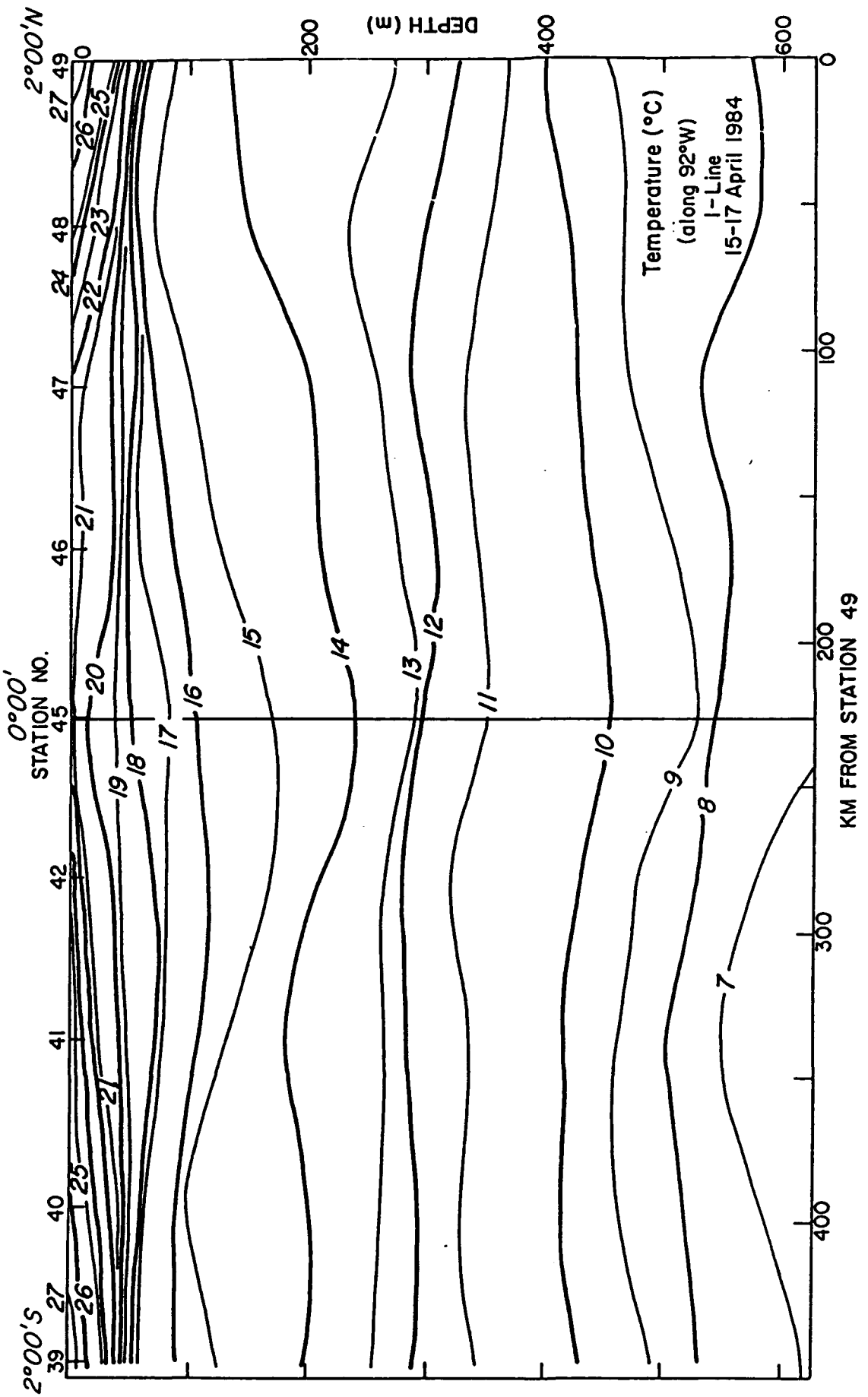
Date		Time	Station No.	Name	Location Lat.	Long.	Wind Dir. (°T)	Spd. (kts)	Pressure (mb)
Apr.	16	0127	41	S-41	0°59.9'S	91°59.6'W	90	7	1011.0
	16	0527	42	S-42	0°30.0'S	92°00.1'	355	4	1013.0
	16	1015	43	S-43	0°29.7'S	91°20.0'	80	4	1011.0
	16	1312	44	S-44	0°15.0'S	91°25.0'	90	2	1013.0
Apr.	17	0411	45	S-45	0°00.4'S	92°00.0'	305	9	1013.0
	17	0814	46	S-46	0°30.8'N	92°00.1'	65	8	1013.0
	17	1143	47	S-47	1°00.4'N	91°59.9'	100	6	1011.0
	17	1551	48	S-48	1°29.8'N	92°00.0'	115	12	1013.2
	17	2006	49	S-49	2°00.0'N	92°00.1'	140	10	1012.0
Apr.	18	1022	50	S-50	1°59.9'N	95°00.4'	130	12	1015.0
	18	1800	XBT8	I-1	1°18.9'N	94°17.1'	110	10	1012.8
	18	2200	XBT9	I-2	1°03.1'N	93°33.4'	160	5	1010.0
Apr.	19	0315	XBT10	I-3	0°44.0'N	92°42.5'	200	4	1012.8
	19	0600	XBT11	I-4	0°26.0'N	91°56.9'	calm	--	1013.0
	19	1000	XBT12	I-5	0°05.8'S	91°09.1'	155	14	1011.0
	19	1400	XBT13	I-6	0°13.2'S	90°30.8'	150	5	1013.8
Apr.	20	2026	51	S-51	1°00.1'N	94°59.6'	160	6	1010.0
Apr.	21	0042	XBT14	--	0°30.0'N	95°0.24'	135	6	1011.0
	21	0352	52	S-52	0°00.3'N	94°59.2'	125	5	1013.0
	21	0727	53	S-53	0°28.1'S	95°01.6'	140	10	1012.0
	21	1140	54	S-54	1°00.1'S	94°59.8'	115	11	1012.0
	21	1517	55	S-55	1°29.5'S	95°00.0'	110	7	1012.9
	21	1945	56	S-56	2°00.4'S	95°00.1'	130	5	1011.0
Apr.	22	0149	57	S-57	3°00.6'S	95°00.3'	150	5	1012.5
	22	0822	58	S-58	4°00.0'S	94°59.9'	110	10	1012.0
	22	0435	59	S-59	5°00.4'S	95°00.1'	120	12	1013.5
Apr.	23	0159	60	S-60	5°00.2'S	93°03.0'	140	16	1013.2
	23	1417	61	S-61	5°00.3'S	91°00.4'	140	17	1015.0
Apr.	24	0256	62	S-62	5°00.3'S	89°00.2'	120	16	1014.0
	24	1504	63	S-63	5°00.0'S	87°00.2'	130	13	1016.0
Apr.	25	0239	64	A-17	5°00.1'S	85°00.4'	105	13	1015.8
	25	0700	65	B-1	5°00.2'S	84°29.7'	125	10	1015.0
	25	1025	66	B-2	5°00.1'S	84°00.1'	135	9	1014.0
	25	1436	67	B-3	5°00.0'S	83°30.2'	148	12	1016.0
	25	1908	68	B-4	5°00.4'S	83°00.0'	145	10	1014.0
	25	2157	69	B-5	5°00.1'S	82°40.3'	160	10	1013.0
	25	2348	70	S-70	5°00.1'S	82°30.1'	160	10	1014.0
Apr.	26	0154	71	S-71	5°00.1'S	82°20.3'	160	12	1014.8
	26	0433	72	S-72	5°00.1'S	82°00.3'	145	8	1015.8
	26	0743	73	S-73	5°02.2'S	81°40.1'	125	10	1015.0
	26	0946	74	S-74	5°02.8'S	81°30.1'	130	9	1015.0
	26	1138	75	S-75	5°04.1'S	81°22.9'	130	8	1016.0
	26	1238	76	S-76	5°05.0'S	81°17.0'	130	10	1016.0
	26	1406	77	S-77	5°05.0'S	81°12.0'	125	9	1017.0

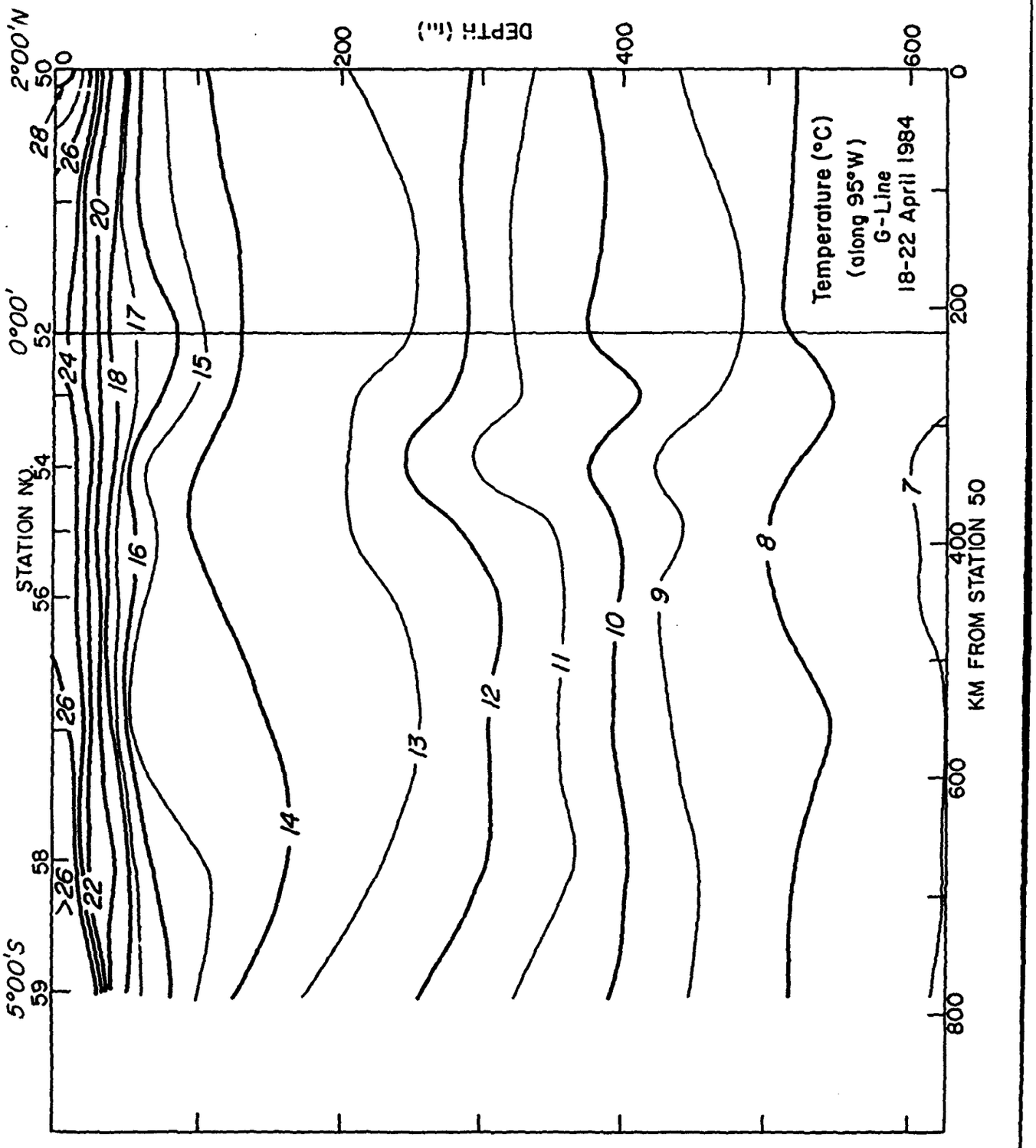

Temperature (°C)
Callao
E-Line
6-8 April 1984
DEPTH (m)
0
200
400
600
STATION NO.
2
4
6
8
10
KM FROM SHORE
0
100
200
1
2
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

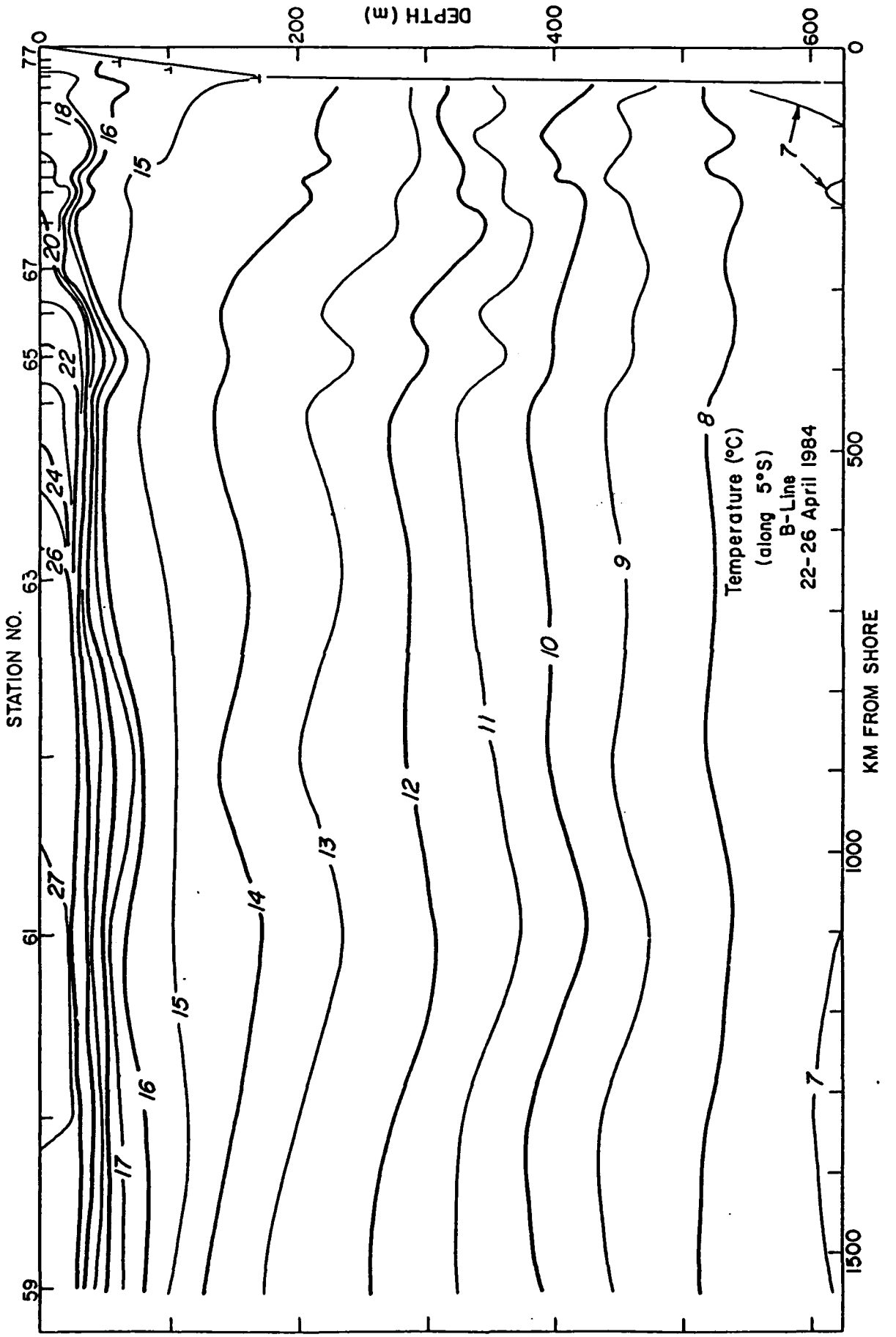

DEPTH (m)
0
200
400
600
Temperature (°C)
Chimbote
D-Line
8-9 April 1984
STATION NO.
11
13
15
17
19
21
KM FROM SHORE
0
100
200
>24
22
20
18
16
15
14
13
12
11
10
9
8
7

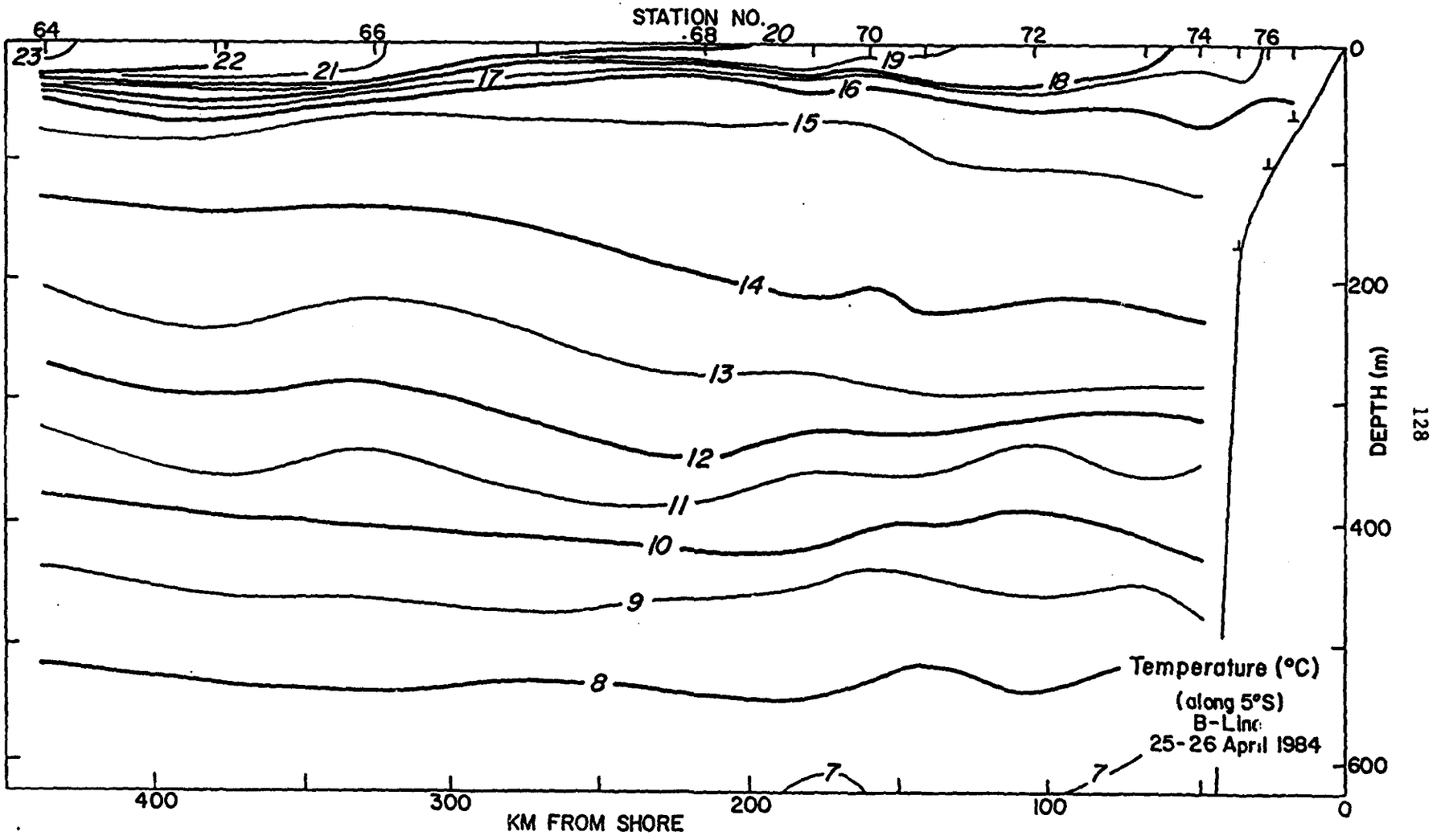

Temperature (°C)
(along 10° 30'S)
9-10 April 1984
DEPTH (m)
0
200
400
600
STATION NO.
21
23
24
26
KM FROM STATION 21
0
200
400
600
>26
25
25
24
20
19
18
17
16
15
14
12
10
8
7

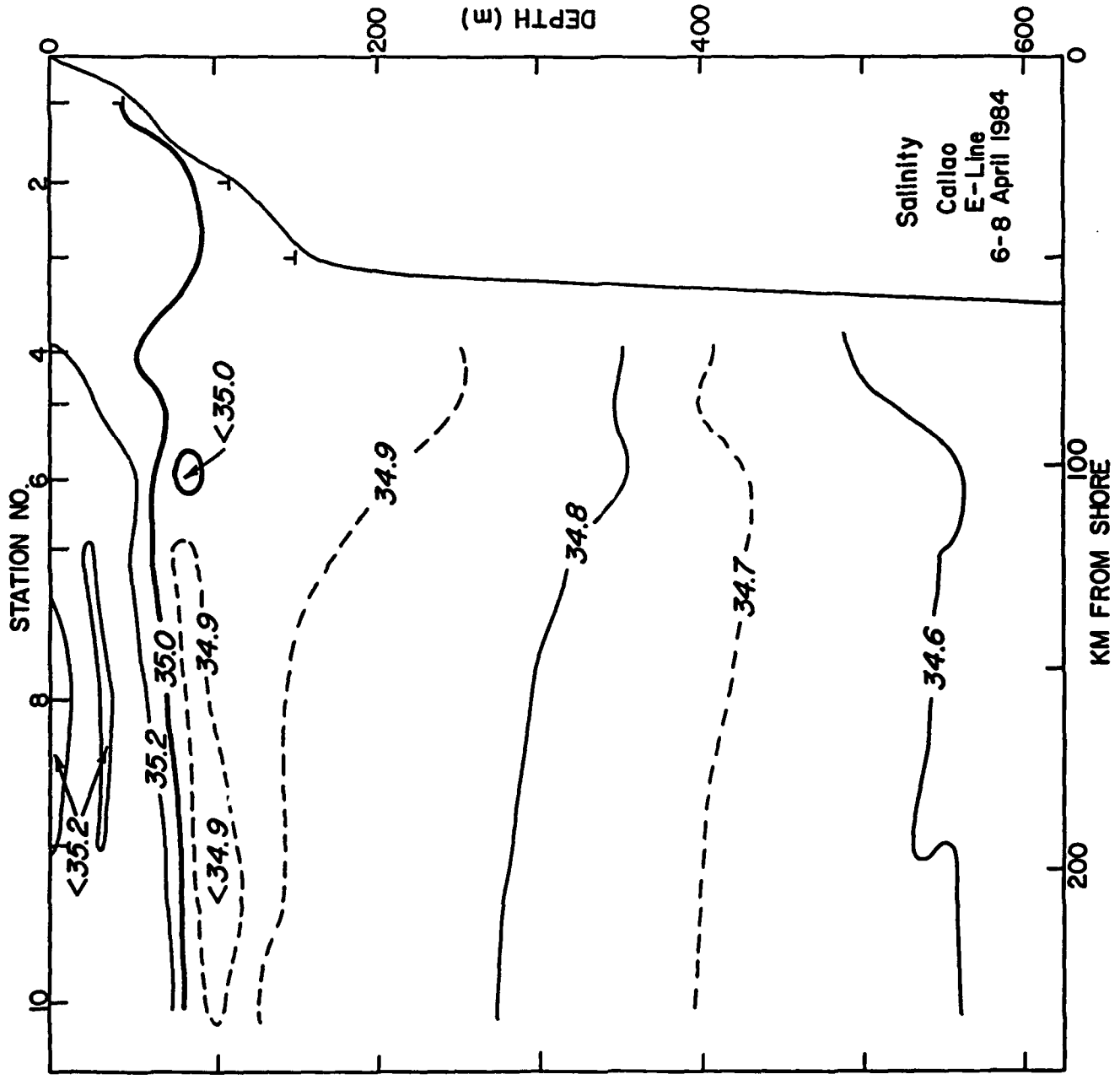

Temperature (°C)
(along 85°W)
A-Line
11-13 April 1984
DEPTH (m)
0
200
400
600
0°00'
9°00'S
STATION NO.
37
35
33
31
29
27
KM FROM STATION 37
0
200
400
600
800
1000
>26
25
24
20
18
17
16
15
14
13
12
11
10
9
8
7

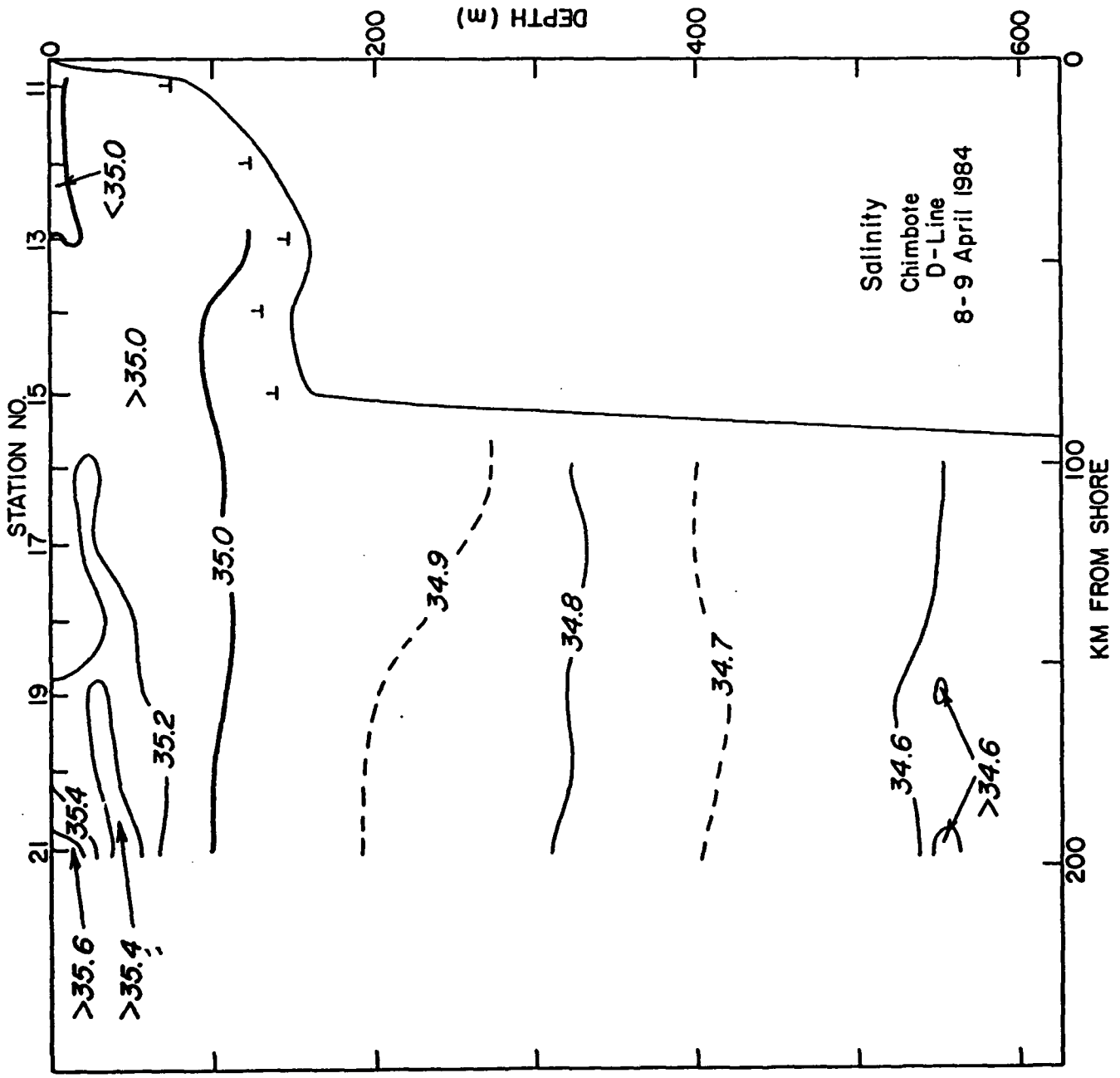

2°00'N
0°00'
2°00'S
STATION NO.
KM FROM STATION 49
DEPTH (m)
Temperature (°C)
(along 92°W)
I-Line
15-17 April 1984

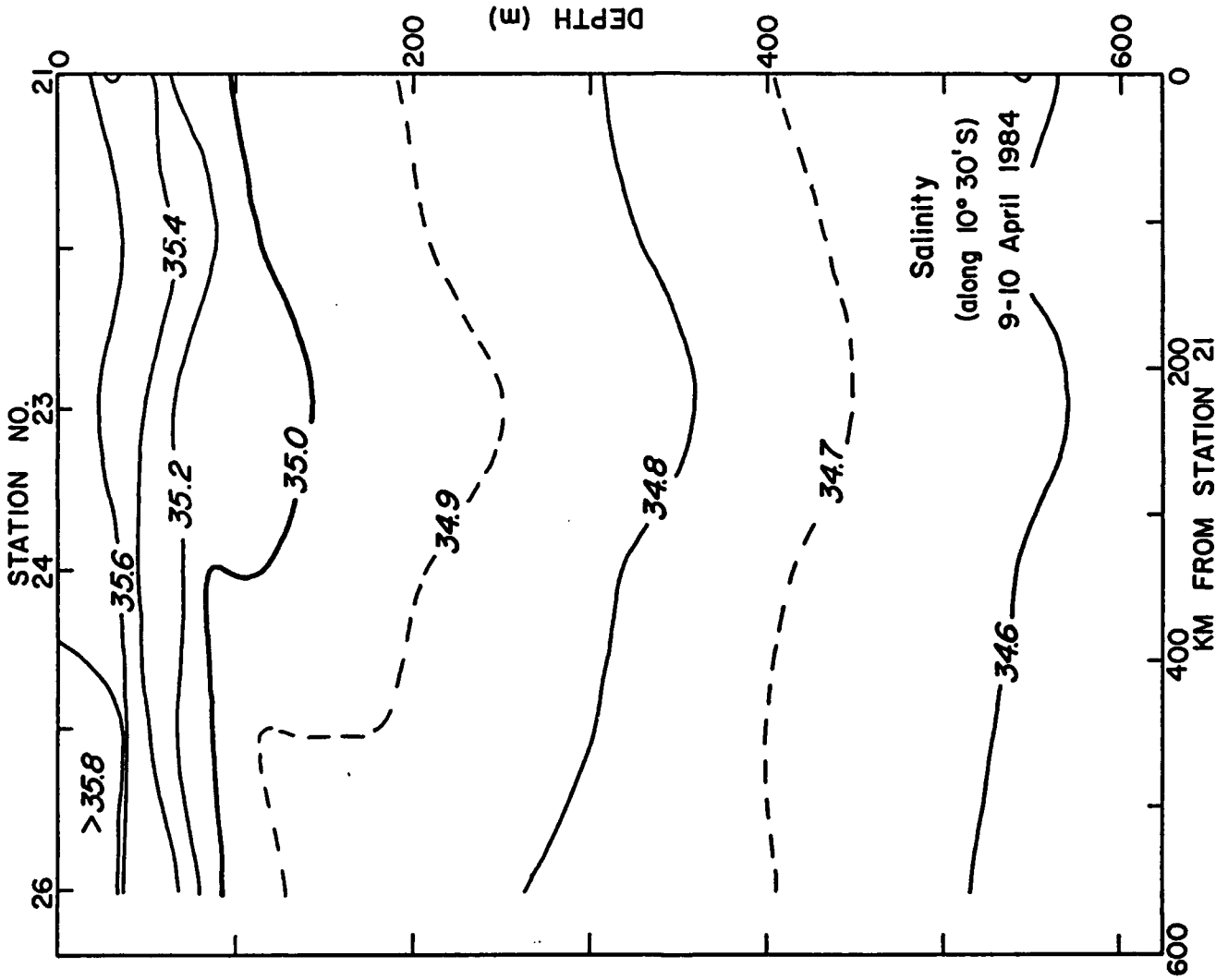

2°00'N
0°00'
5°00'S
STATION NO.
50
52
54
56
58
59
28
26
20
17
24
18
15
16
26
>26
22
14
13
12
11
10
9
8
7
DEPTH (m)
0
200
400
600
800
KM FROM STATION 50
Temperature (°C)
(along 95°W)
G-Line
18-22 April 1984

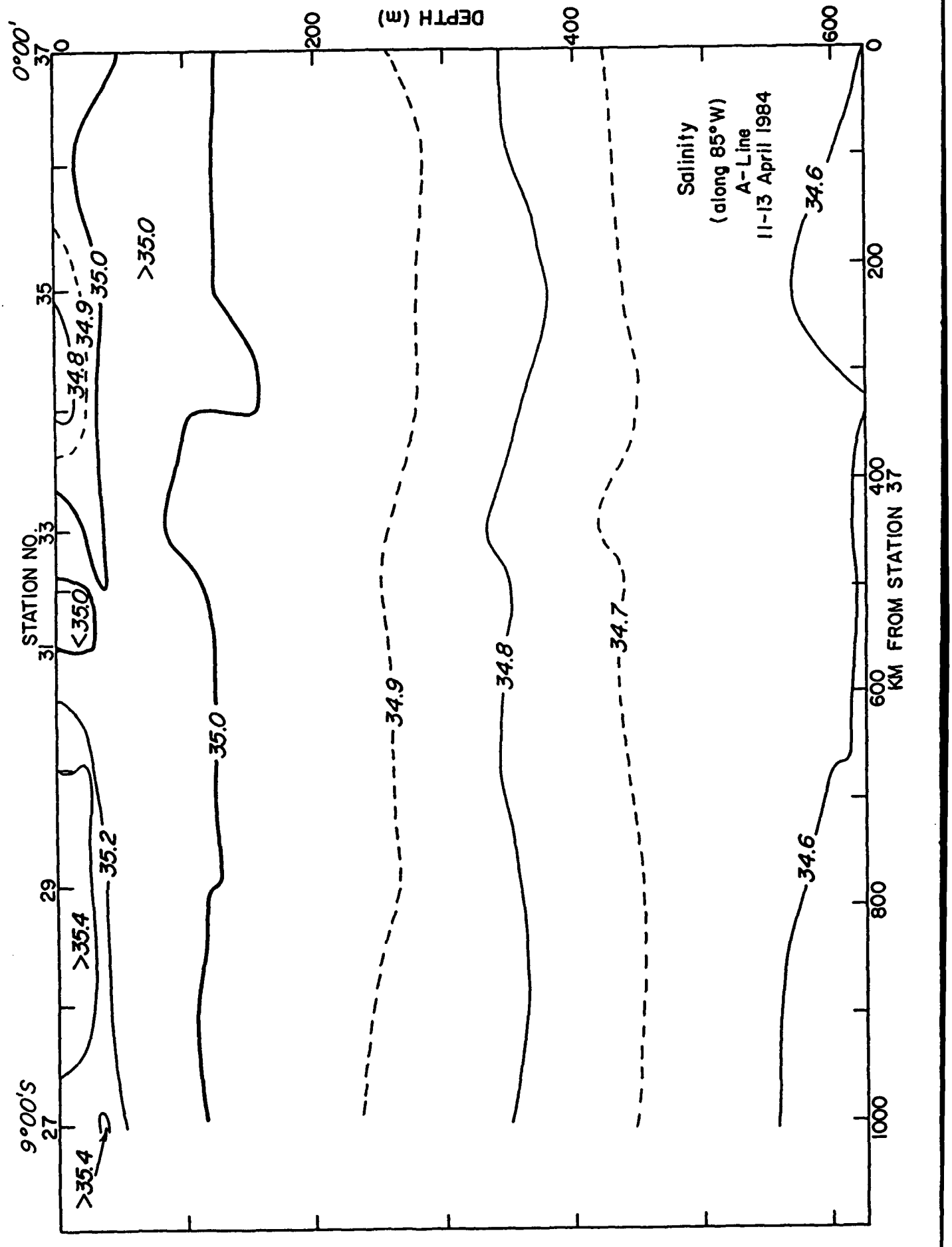

DEPTH (m)
0
200
400
600
STATION NO.
77
67
65
63
61
59
KM FROM SHORE
0
500
1000
1500
Temperature (°C)
(along 5°S)
B-Line
22-26 April 1984
18
16
15
20
22
24
26
27
17
16
15
14
13
12
11
10
9
8
7
7

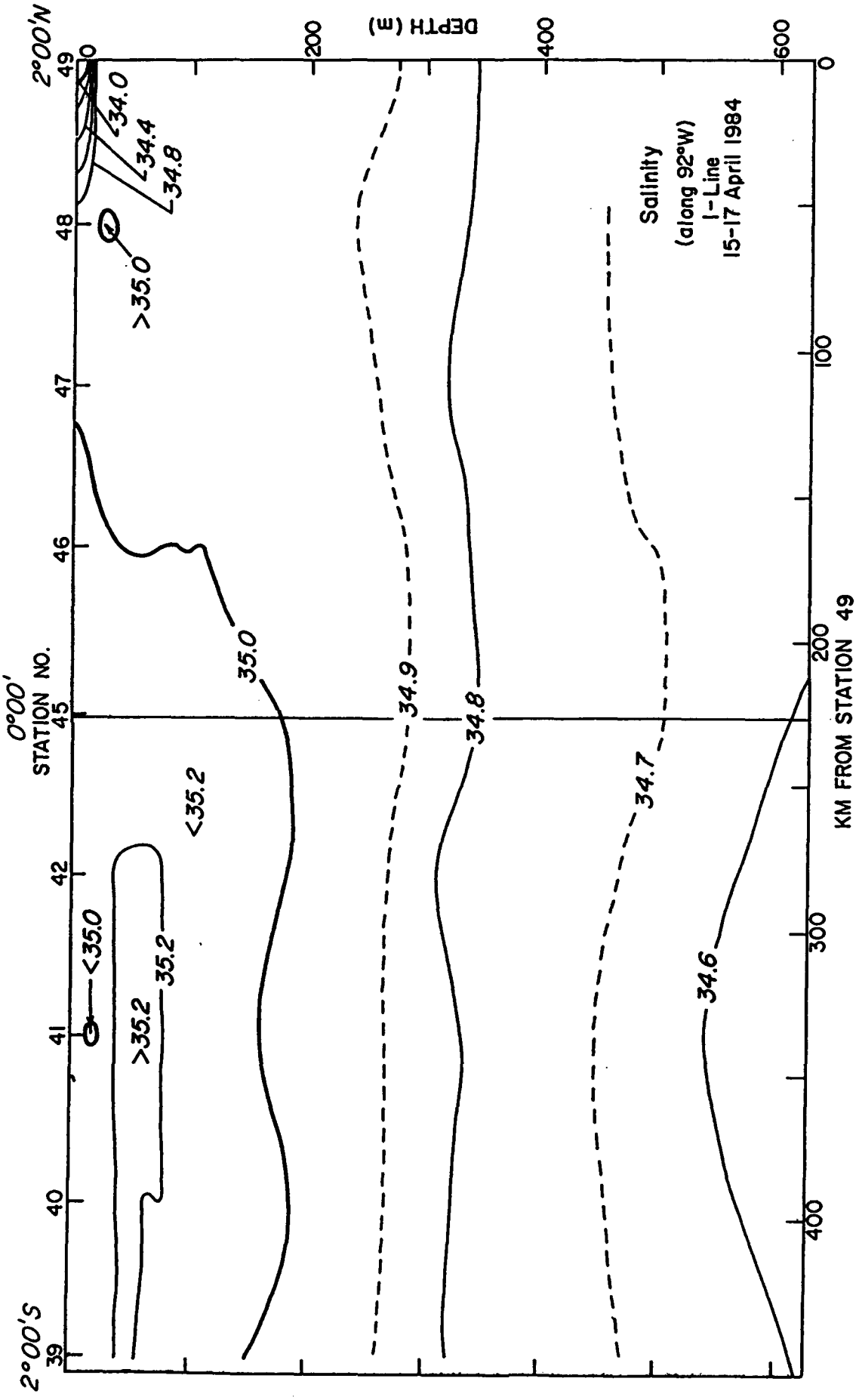

STATION NO.
64
66
68
70
72
74
76
0
200
400
600
DEPTH (m)
23
22
21
17
19
18
16
15
14
13
12
11
10
9
8
7
7
400
300
200
100
0
KM FROM SHORE
Temperature (°C)
(along 5°S)
B-Line
25-26 April 1984


Salinity
Callao
E-Line
6-8 April 1984
DEPTH (m)
0
200
400
600
STATION NO.
2
4
6
8
10
KM FROM SHORE
0
100
200
<35.0
34.9
34.8
34.7
34.6
35.2
35.0
34.9
<35.2
<34.9

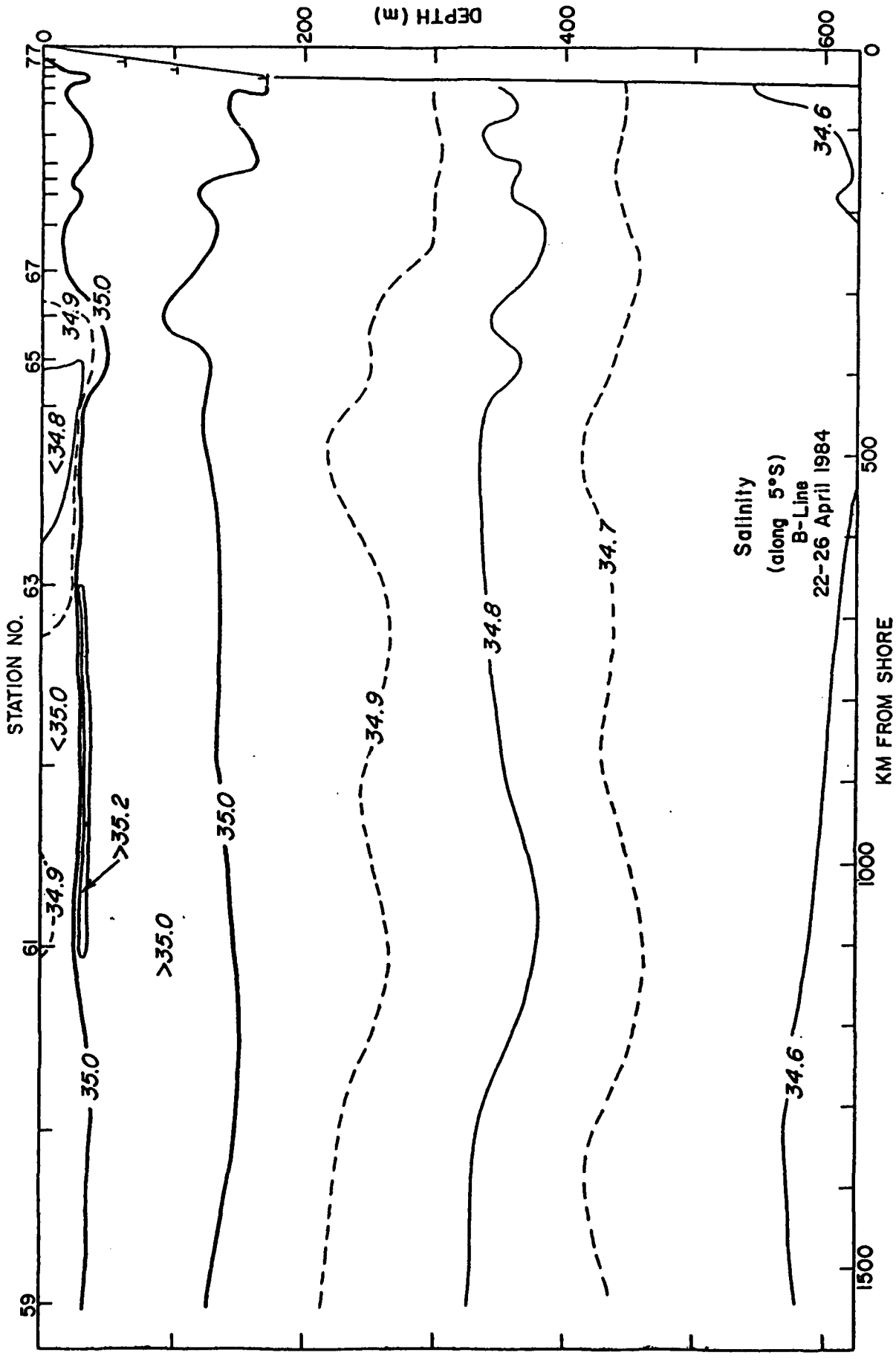

DEPTH (m)
0
200
400
600
STATION NO.
11
13
15
17
19
21
KM FROM SHORE
0
100
200
Salinity
Chimbote
D-Line
8-9 April 1984
<35.0
>35.0
35.0
35.2
34.9
34.8
34.7
34.6
>34.6
>35.6
>35.4
35.4

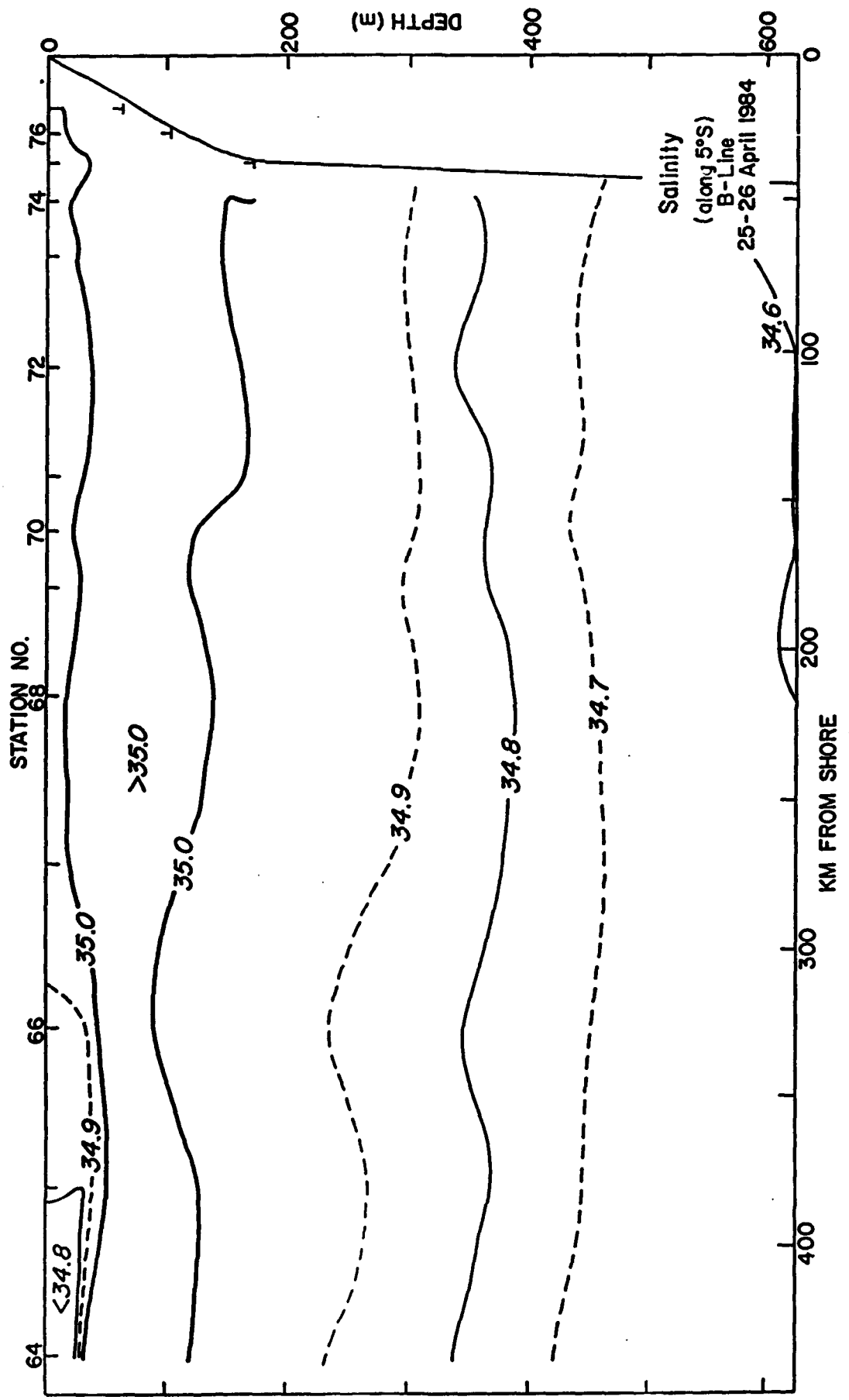

DEPTH (m)
0
200
400
600
STATION NO.
21
23
24
26
KM FROM STATION 21
0
200
400
600
Salinity
(along 10° 30'S)
9-10 April 1984
>35.8
35.6
35.4
35.2
35.0
34.9
34.8
34.7
34.6

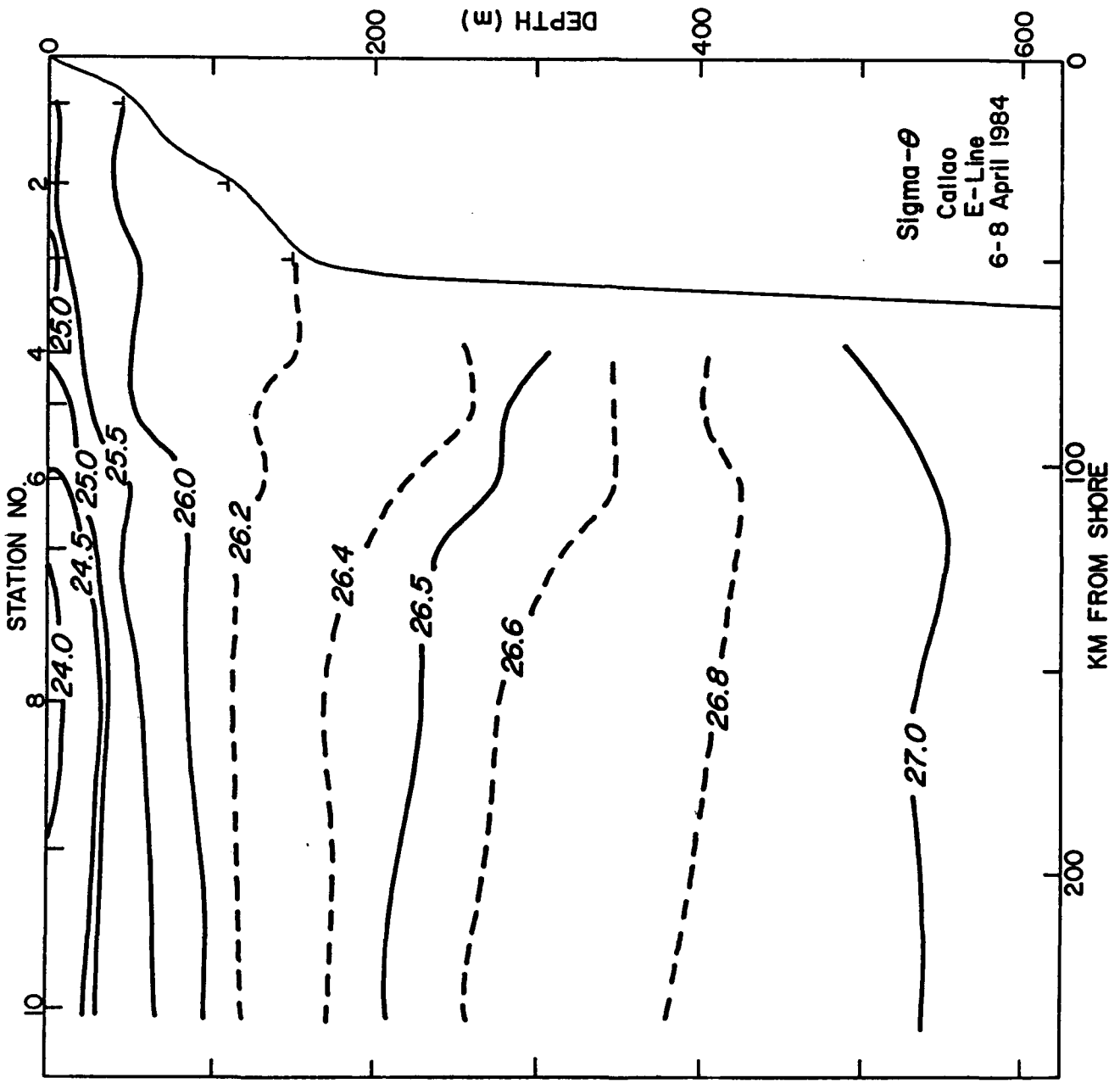

Salinity
(along 85°W)
A-Line
11-13 April 1984
DEPTH (m)
KM FROM STATION 37
STATION NO.
0°00'
9°00'S
>35.0
35.0
34.9
34.8
<35.0
>35.4
35.2
34.7
34.6

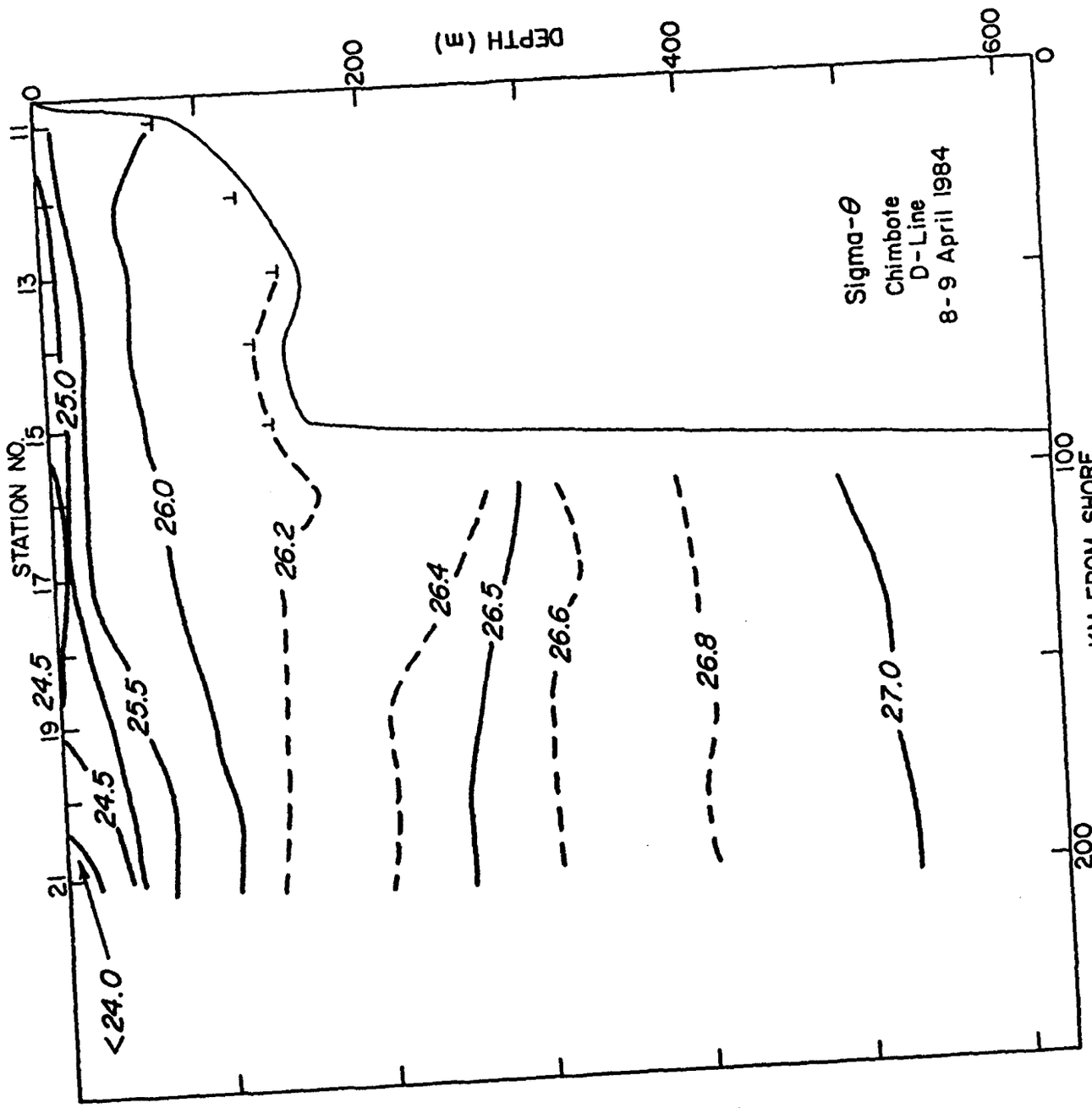

Salinity
(along 92°W)
I-Line
15-17 April 1984
DEPTH (m)
KM FROM STATION 49
STATION NO.
2°00'N
0°00'
2°00'S
34.0
34.4
34.8
>35.0
35.0
34.9
34.8
<35.2
<35.0
35.2
>35.2
34.7
34.6

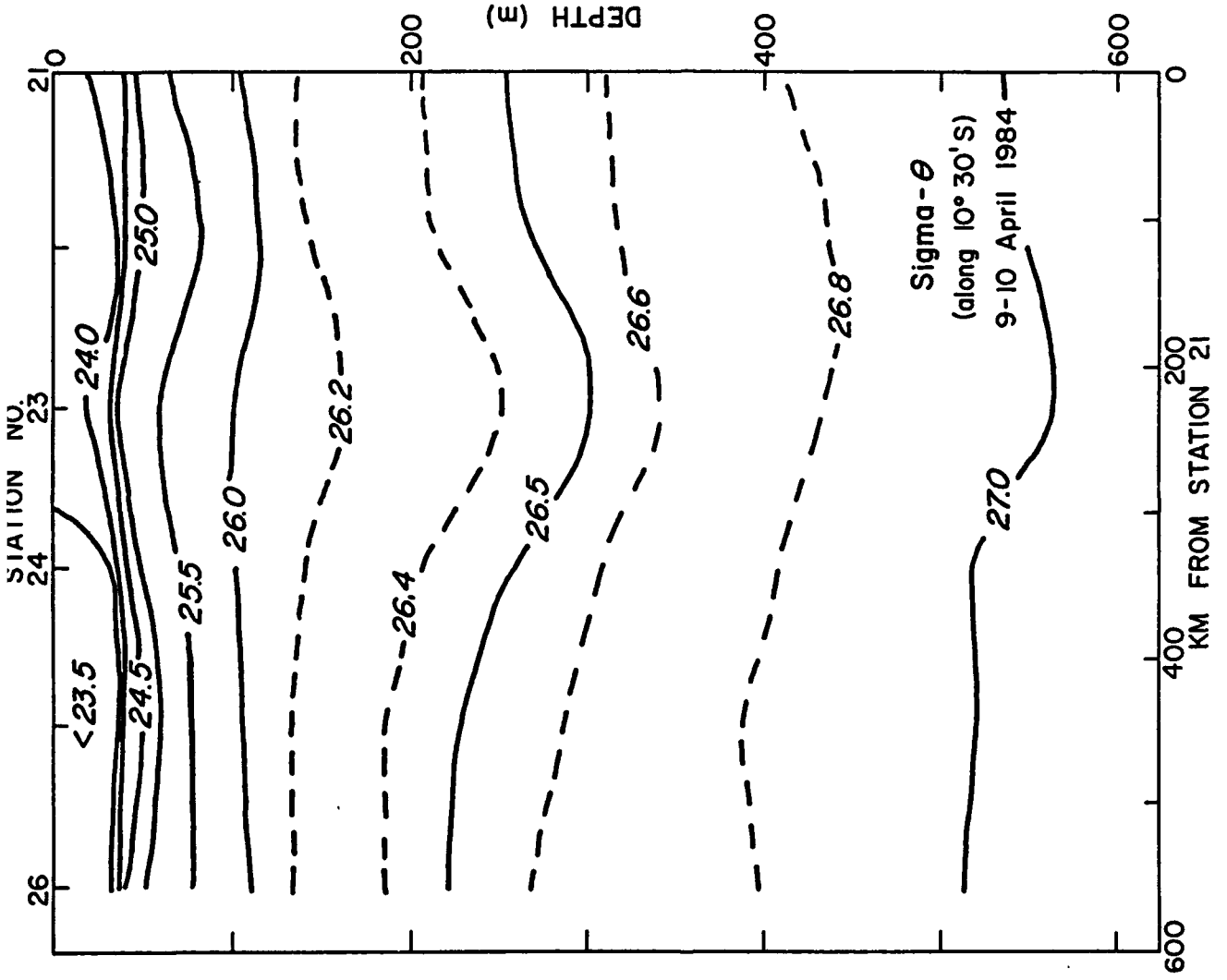
Salinity
(along 95°W)
G-Line
18-22 April 1984
DEPTH (m)
KM FROM STATION 50
STATION NO.
2°00'
0°00'
5°00'S
34.0
34.4
34.8
>35.2
35.0
34.9
34.8
34.7
34.6
34.6
<35.0

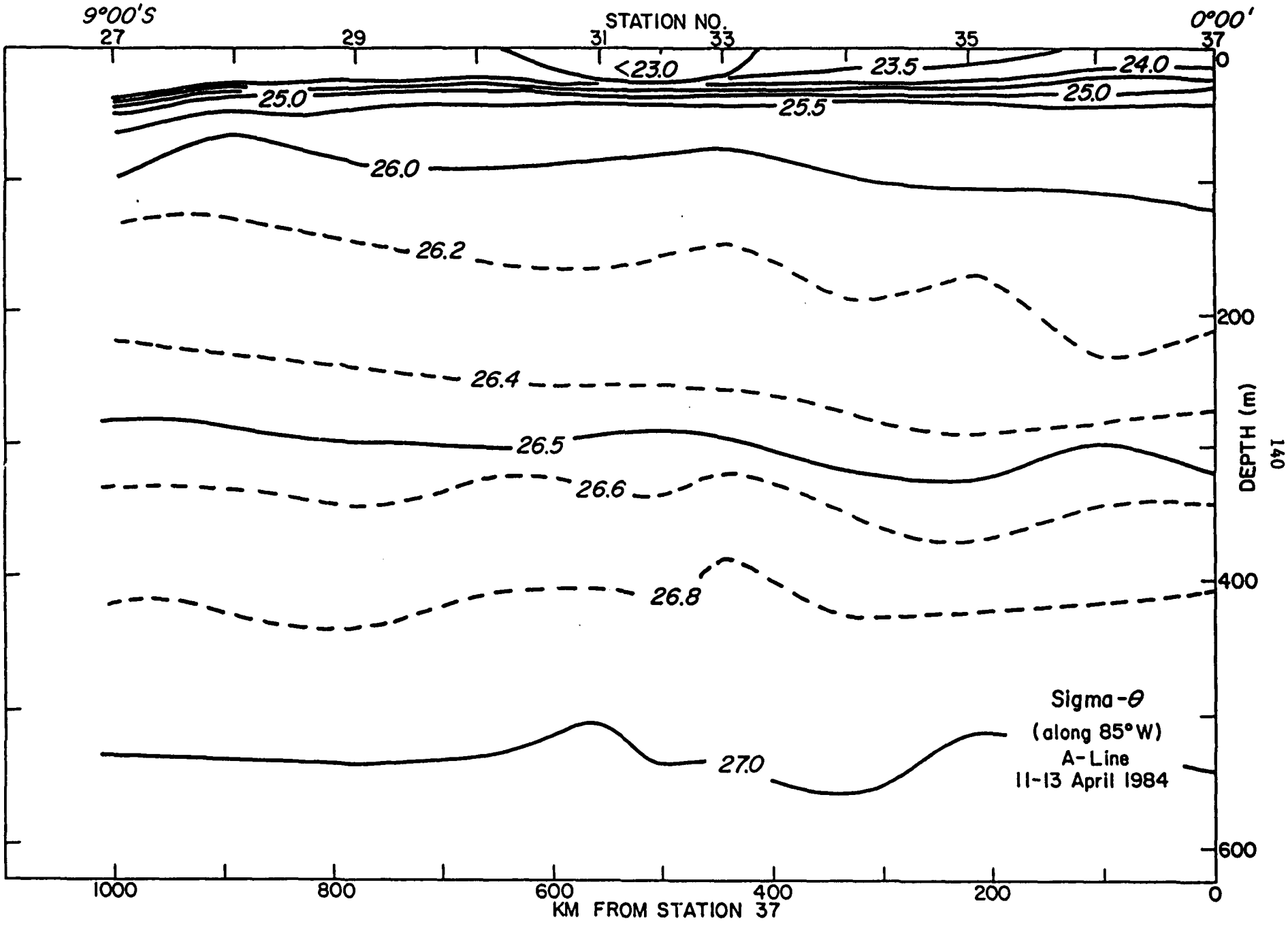

DEPTH (m)
0
200
400
600
STATION NO.
77
67
65
63
61
59
0
500
1000
1500
KM FROM SHORE
Salinity
(along 5°S)
B-Line
22-26 April 1984
34.6
34.7
34.8
34.9
35.0
<34.8
<35.0
>35.2
>35.0

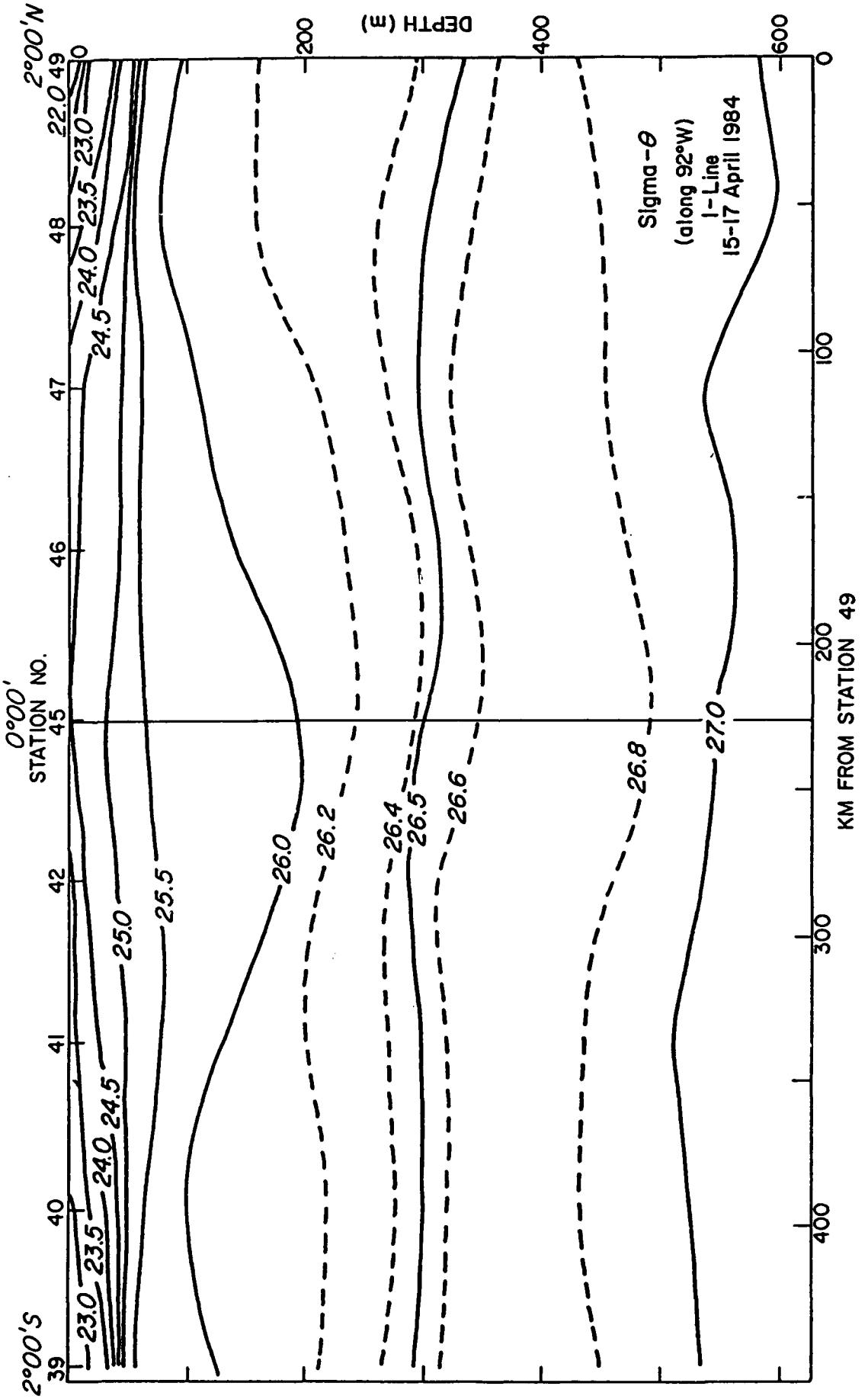

Salinity
(along 5°S)
B-Line
25-26 April 1984
DEPTH (m)
0
200
400
600
STATION NO.
64
66
68
70
72
74
76
KM FROM SHORE
0
100
200
300
400
<34.8
34.9
35.0
>35.0
35.0
34.9
34.8
34.7
34.6

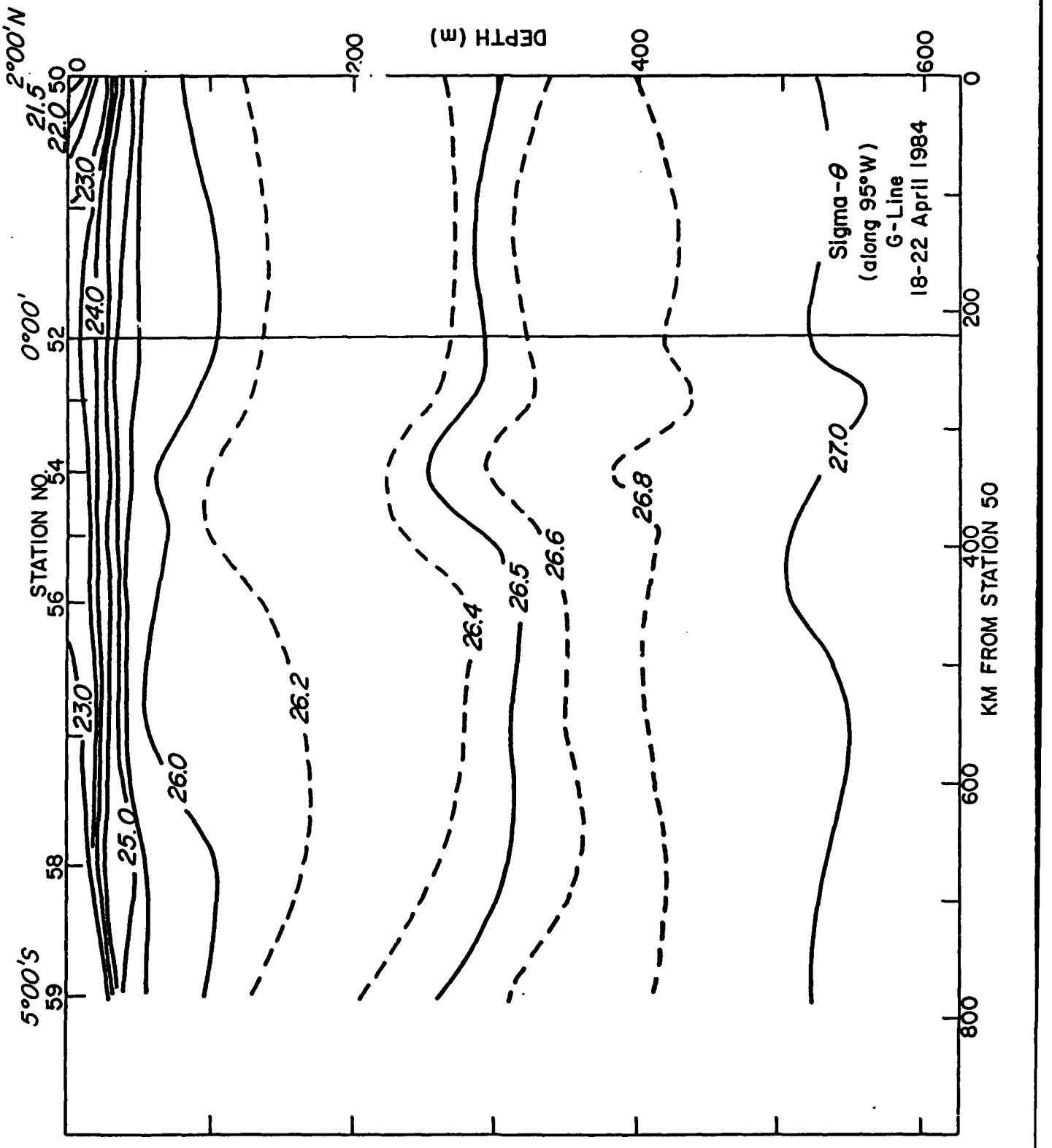

DEPTH (m)
0
200
400
600
Sigma-θ
Callao
E-Line
6-8 April 1984
STATION NO.
2
4
6
8
10
0
100
200
KM FROM SHORE
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0

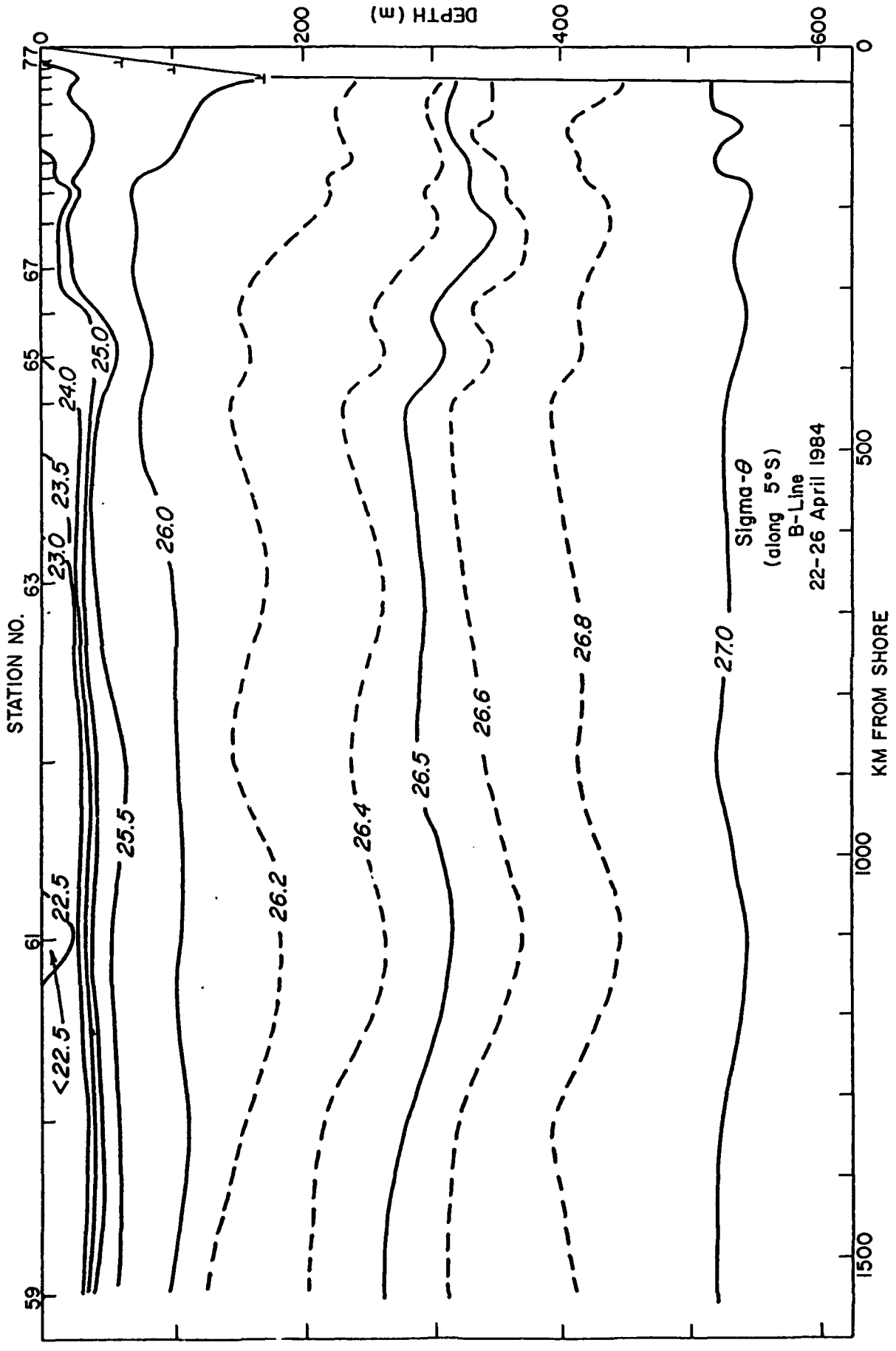

DEPTH (m)
0
200
400
600
STATION NO.
11
13
15
17
19
21
KM FROM SHORE
0
100
200
Sigma-θ
Chimbote
D-Line
8-9 April 1984
<24.0
24.5
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0

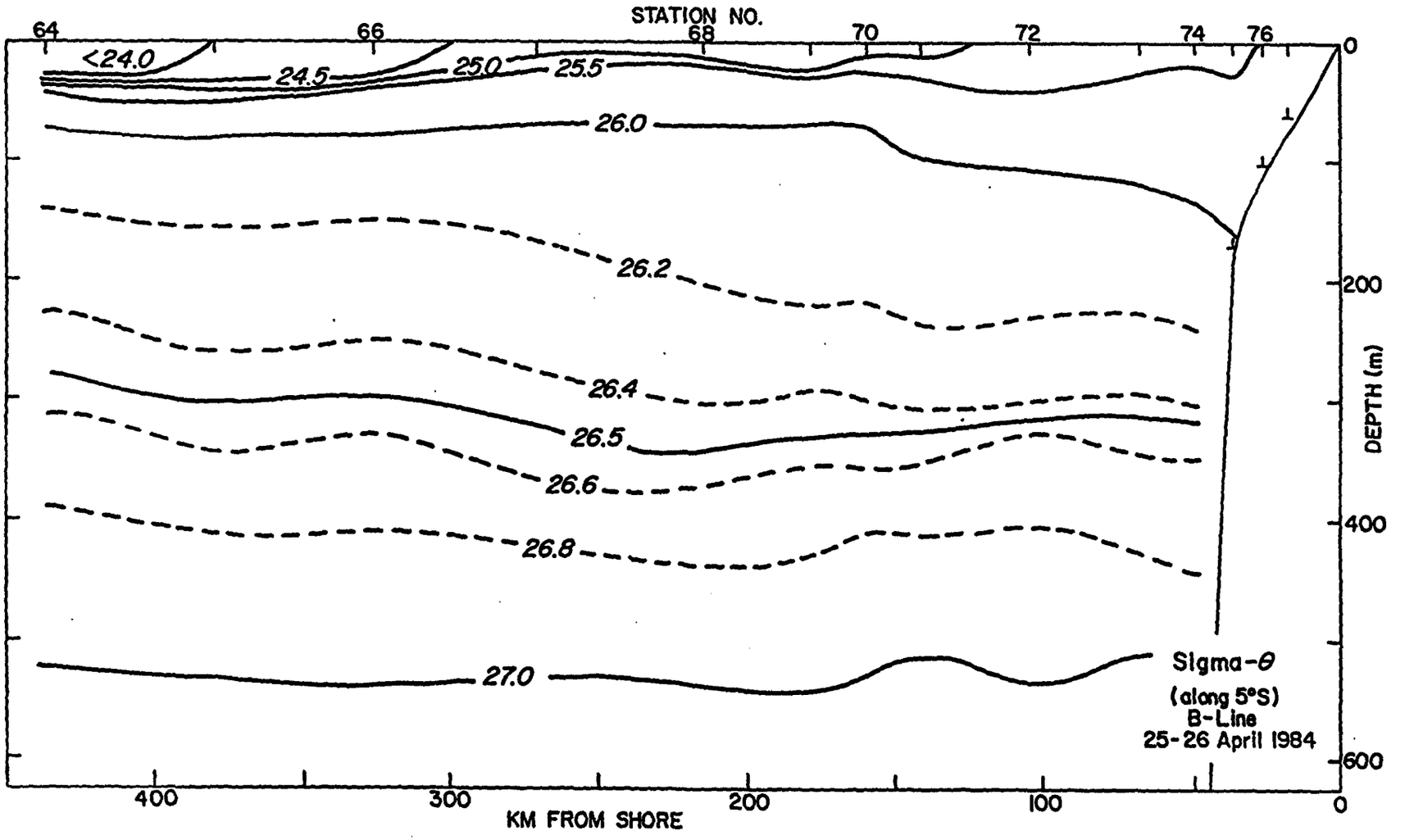

DEPTH (m)
0
200
400
600
STATION NO.
21
23
24
26
KM FROM STATION 21
0
200
400
600
Sigma-θ
(along 10° 30'S)
9-10 April 1984
<23.5
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0

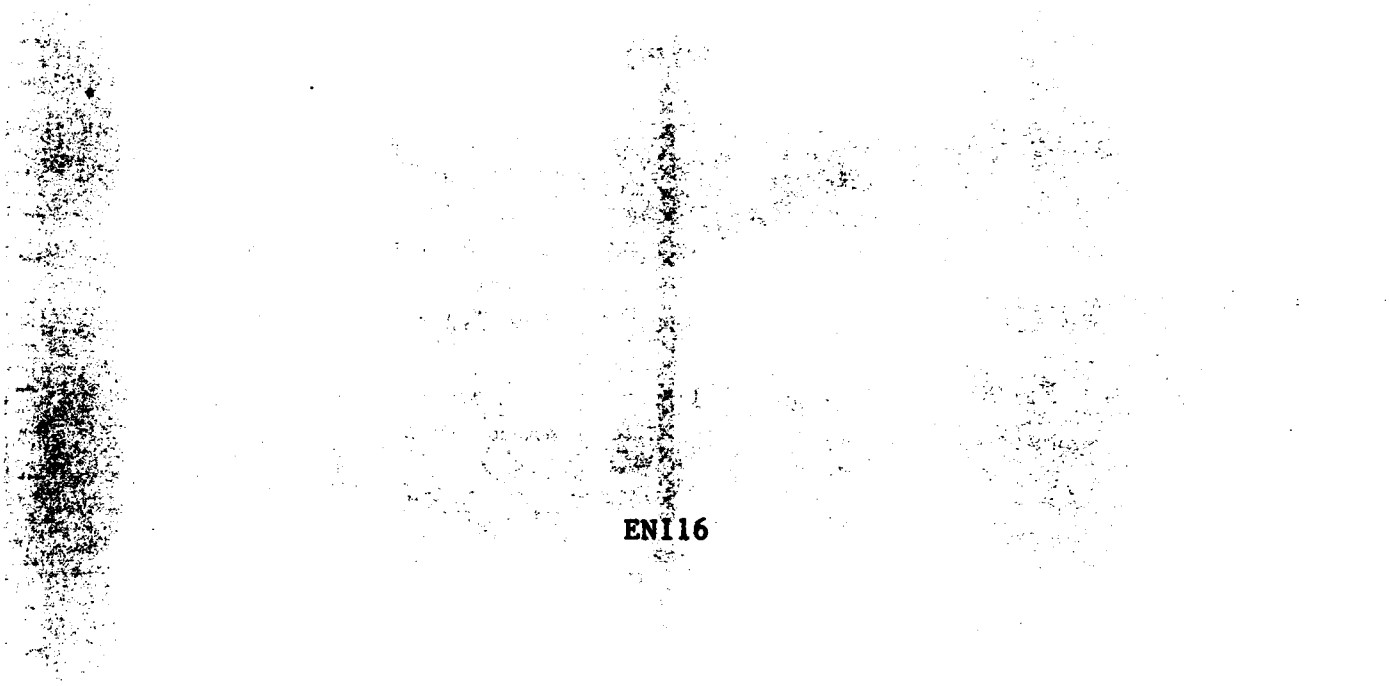

9°00'S
STATION NO.
0°00'
27
29
31
33
35
37
<23.0
23.5
24.0
25.0
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
0
200
400
600
DEPTH (m)
140
Sigma-θ
(along 85°W)
A-Line
11-13 April 1984
1000
800
600
400
200
0
KM FROM STATION 37


2°00'N
0°00'
2°00'S
STATION NO.
39
40
41
42
45
46
47
48
49
0
200
400
600
DEPTH (m)
0
100
200
300
400
KM FROM STATION 49
Sigma-θ
(along 92°W)
I-Line
15-17 April 1984
22.0
23.0
23.5
24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0


2°00'N
0°00'
5°00'S
STATION NO.
50
52
54
56
58
59
0
200
400
600
800
DEPTH (m)
KM FROM STATION 50
Sigma-θ
(along 95°W)
G-Line
18-22 April 1984
21.5
22.0
23.0
24.0
25.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0


DEPTH (m)
0
200
400
600
STATION NO.
77
67
65
63
61
59
0
500
1000
1500
KM FROM SHORE
<22.5
22.5
23.0
23.5
24.0
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
Sigma-θ
(along 5°S)
B-Line
22-26 April 1984


STATION NO.
64
66
68
70
72
74
76
<24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
0
200
400
600
DEPTH (m)
400
300
200
100
0
KM FROM SHORE
Sigma-θ
(along 5°S)
B-Line
25-26 April 1984



ENI16

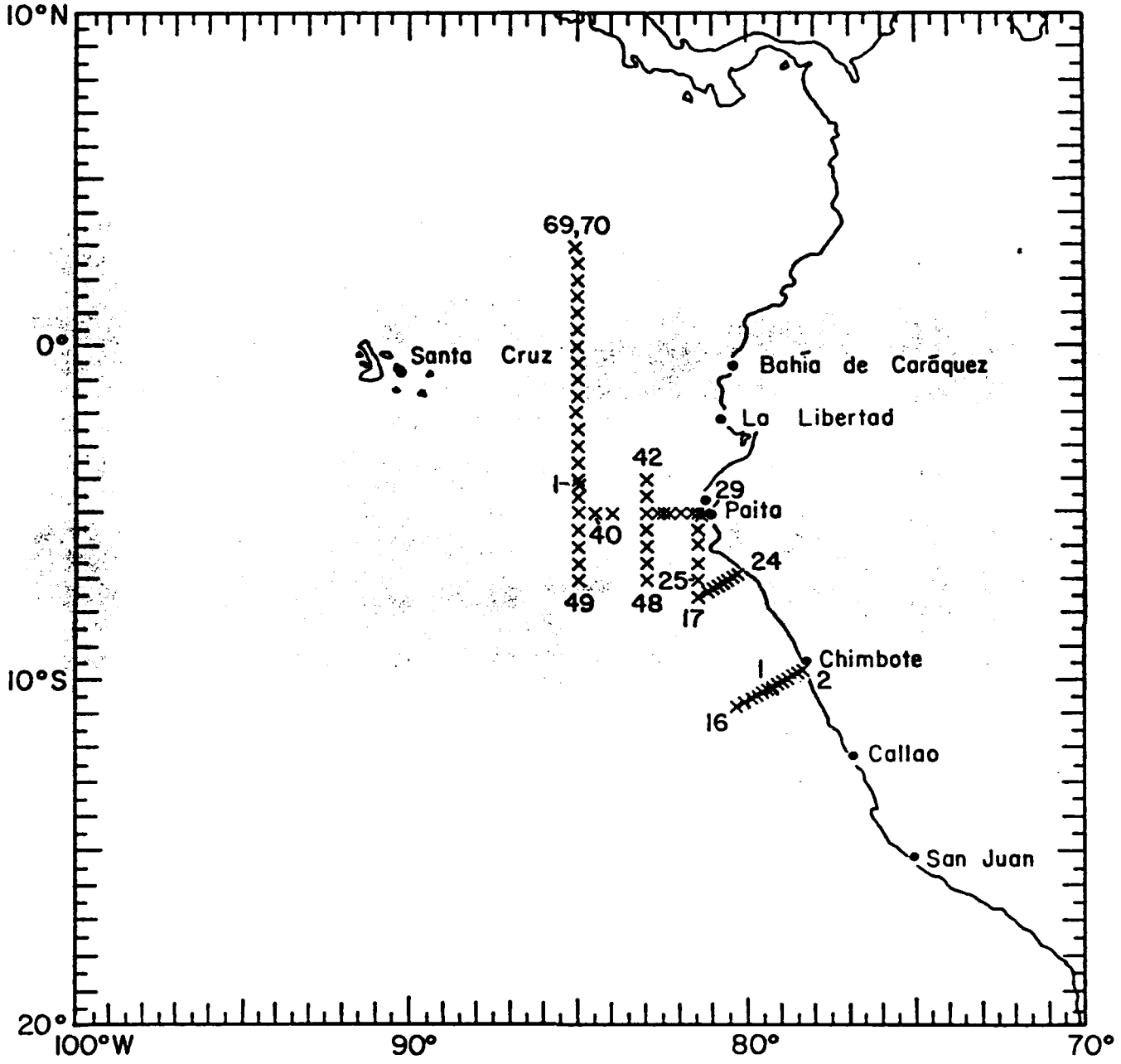


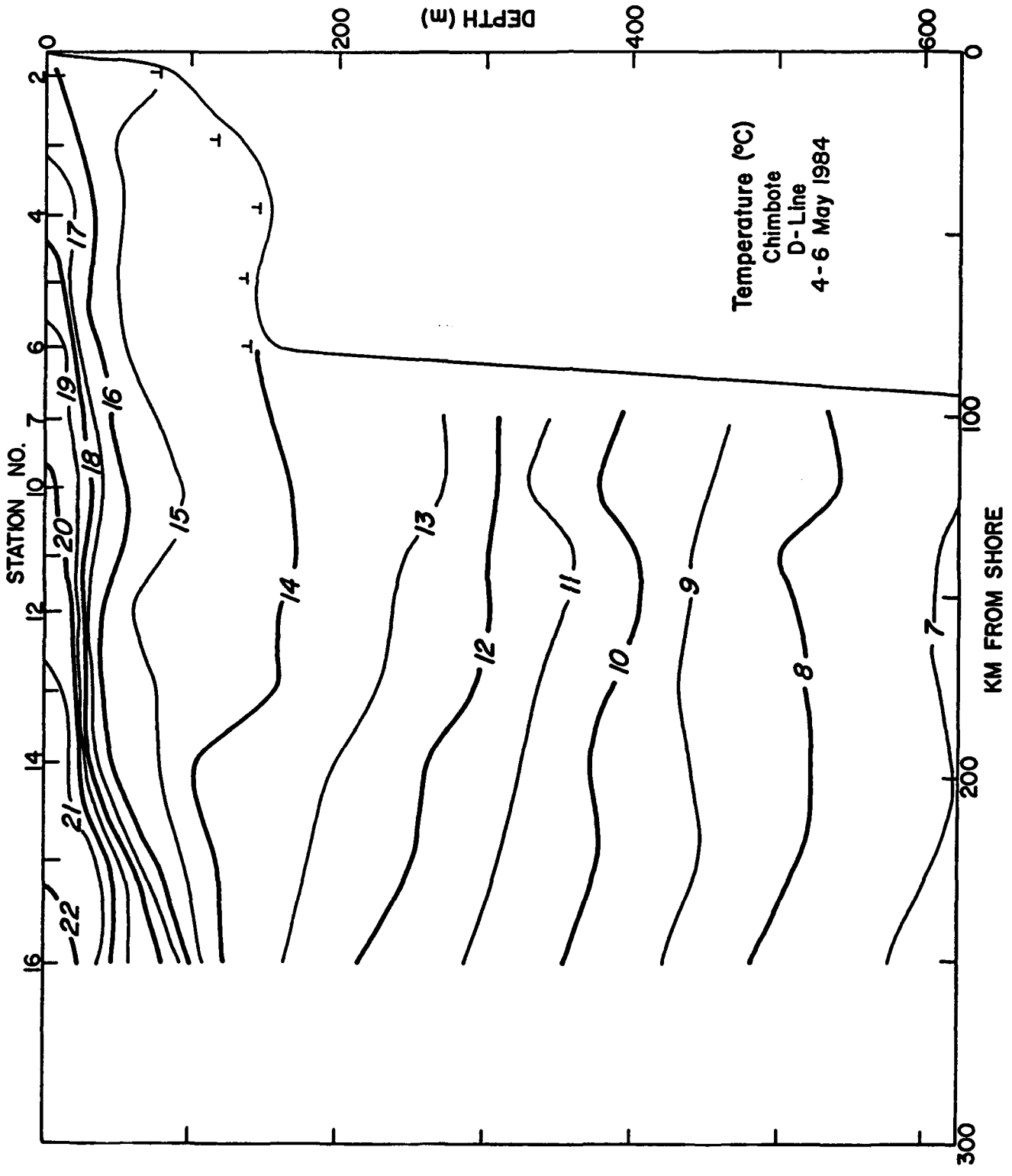
Figure 6. Location of CTD stations during EN116, 3-16 May 1984.

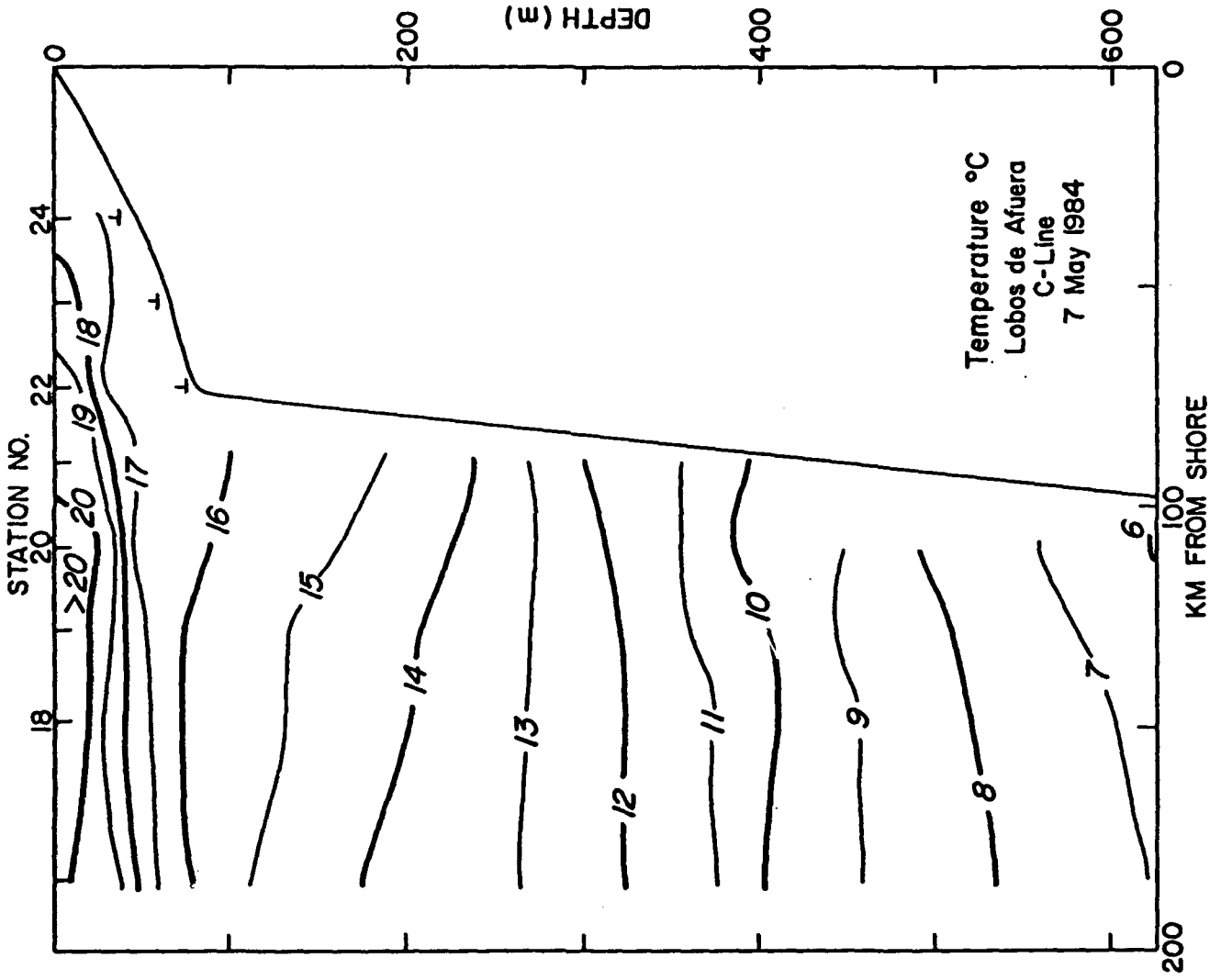
Table 7 List of stations occupied during EN116 showing date, time, location, wind speed and direction and atmospheric pressure.

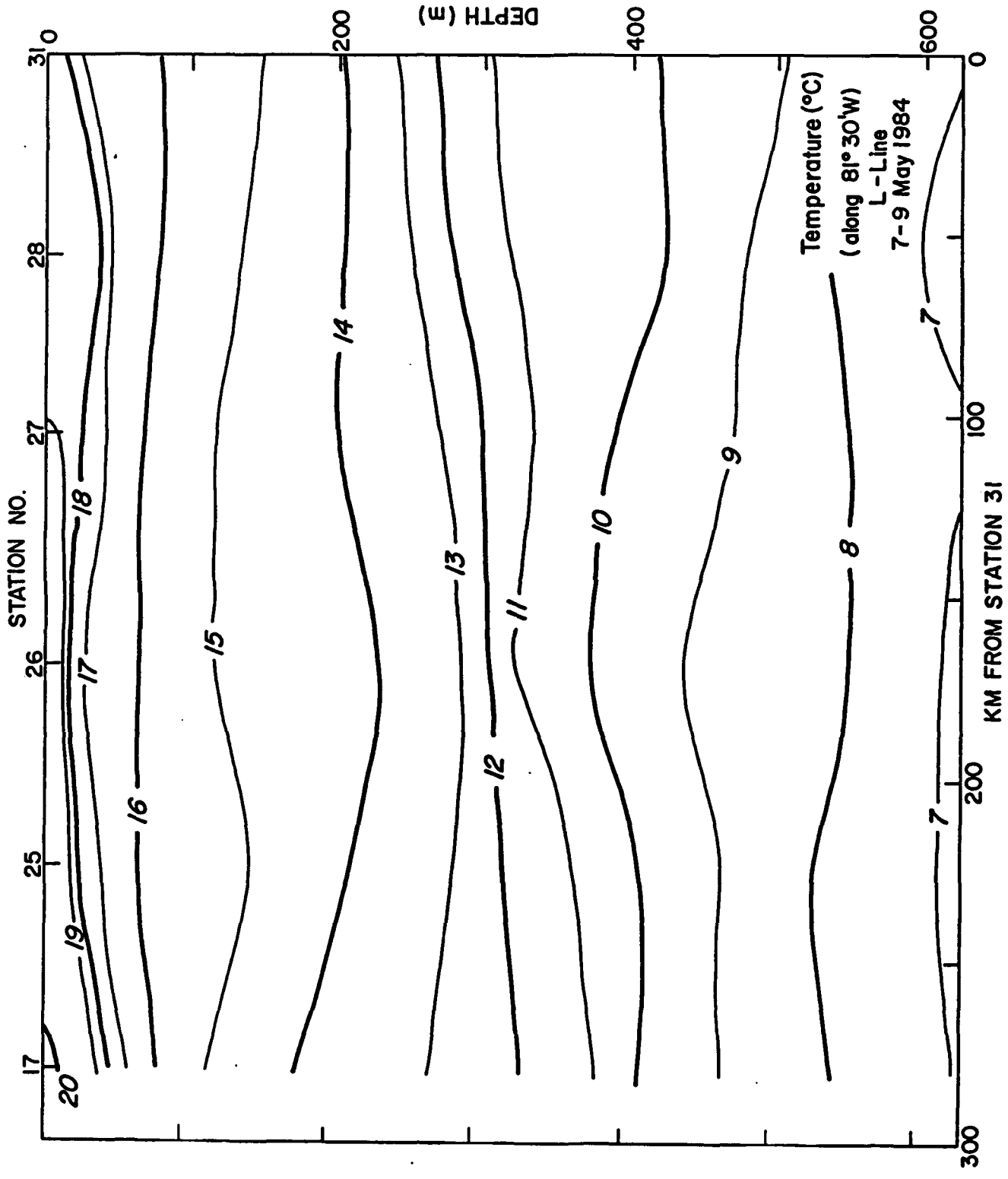
Date		Time	Station No.	Name	Location Lat.	Long.	Wind Dir. (°T)	Spd. (kts)	Pressure (mb)
May	3	1534	1	10-SM	10°14.4'S	79°18.7'W	135	8	1016.3
May	4	0334	2	D-1	9°40.0'S	78°24.0'	140	8	1014.0
	4	0514	3	D-2	9°44.9'S	78°32.9'	145	10	1014.5
	4	0654	4	D-3	9°49.8'S	78°42.0'	145	8	1014.0
	4	0853	5	D-4	9°54.9'S	78°51.1'	150	18	1013.0
	4	1019	6	D-5	10°00.0'S	78°59.8'	150	16	1013.0
	4	1145	7	D-6	10°05.0'S	79°08.9'	145	10	1013.0
May	5	1720	8	D-5M	10°00.6'S	79°00.1'	155	8	1014.0
	5	1836	9	D-6	10°05.0'S	79°09.0'	135	8	1015.0
	5	2023	10	D-7	10°10.0'S	79°18.1'	140	8	1014.0
	5	2224	11	D-8	10°14.9'S	79°27.0'	140	10	1013.0
May	6	0036	12	D-9	10°20.0'S	79°35.9'	140	9	1015.0
	6	0248	13	D-10	10°24.9'S	79°45.0'	140	5	1014.0
	6	0451	14	D-11	10°29.8'S	79°54.1'	135	7	1015.0
	6	0723	15	D-11A	10°37.3'S	80°07.0'	100	12	1014.5
	6	0952	16	D-12	10°45.2'S	80°21.0'	120	9	1015.0
May	7	0426	17	C-9	7°30.1'S	81°30.0'	110	4	1015.0
	7	0734	18	C-8	7°20.6'S	81°12.9'	125	12	1015.0
	7	1003	19	C-7	7°15.3'S	81°03.8'	120	13	1015.0
	7	1214	20	C-6	7°10.2'S	80°55.1'	150	18	1016.0
	7	1417	21	C-5	7°05.1'S	80°46.0'	135	15	1017.0
	7	1606	22	C-4	7°00.0'S	80°38.1'	135	14	1017.0
	7	1723	23	C-3	6°55.0'S	80°29.0'	150	12	1015.0
	7	1900	24	C-2	6°49.9'S	80°20.1'	165	8	1014.0
May	8	0148	25	L-2	7°00.1'S	81°30.0'	135	9	1015.0
	8	0549	26	L-3	6°30.3'S	81°30.1'	155	10	1015.6
	8	0944	27	L-4	5°56.1'S	81°30.2'	VAR	2	1016.0
	8	1303	28	L-5	5°29.8'S	81°30.0'	105	4	1017.0
May	9	0051	29	B-11	5°00.0'S	81°15.0'	125	18	1013.0
	9	0151	30	B-10	5°00.1'S	81°19.7'	165	12	1014.0
	9	0310	31	B-9	5°00.0'S	81°29.9'	135	12	1015.0
	9	0520	32	B-8	4°59.9'S	81°39.8'	130	7	1019.0
	9	0803	33	B-7	4°59.7'S	81°59.7'	140	10	1015.0
	9	1045	34	B-6	5°00.7'S	82°20.0'	130	6	1016.0
	9	1758	35	B-5A	4°59.9'S	82°30.1'	160	12	1014.6
	9	2006	36	B-5	4°59.8'S	82°40.1'	170	10	1013.0
	9	2251	37	B-4	5°00.0'S	83°00.6'	--	9	1014.0
May	10	1139	38	5-SM	5°03.9'S	81°23.4'	135	8	--
May	11	0229	39	B-2	5°00.0'S	84°00.0'	135	10	1013.6
	11	0605	40	B-1	4°59.9'S	84°29.9'	135	8	1014.0
	11	1629	41	85-NM	4°09.0'S	84°58.0'	135	6	1016.0
May	12	0643	42	LL-1	4°00.2'S	83°00.1'	175	5	1014.5
	12	1009	43	LL-2	4°29.9'S	82°59.7'	150	9	1014.0
	12	1326	44	LL-3	5°00.0'S	83°00.0'	135	4	1016.0
	12	1656	45	LL-4	5°29.7'S	83°00.7'	110	6	1016.0
	12	2024	46	LL-5	5°59.7'S	83°00.0'	150	3	1014.0

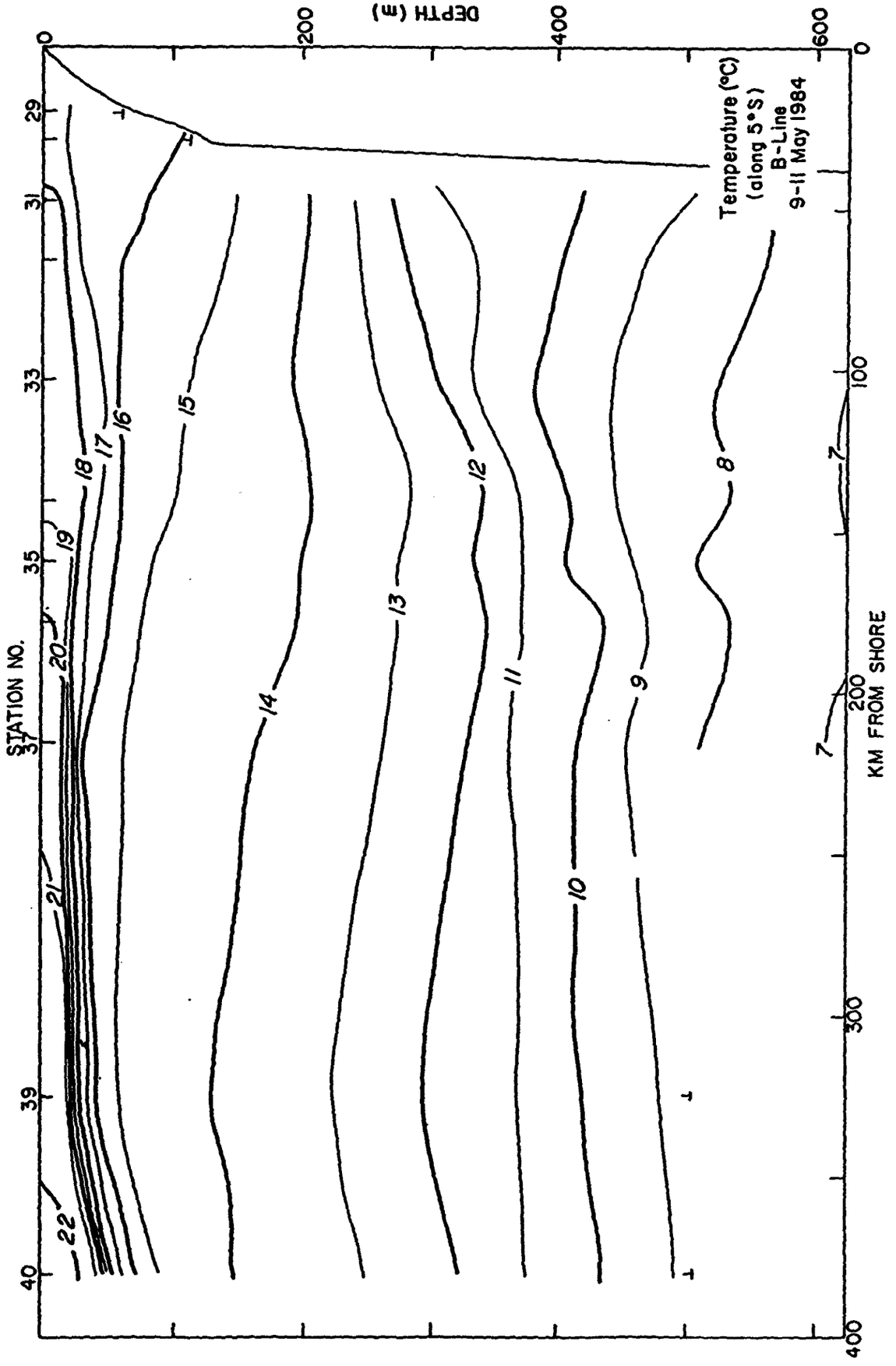
Table 7 cont'd.

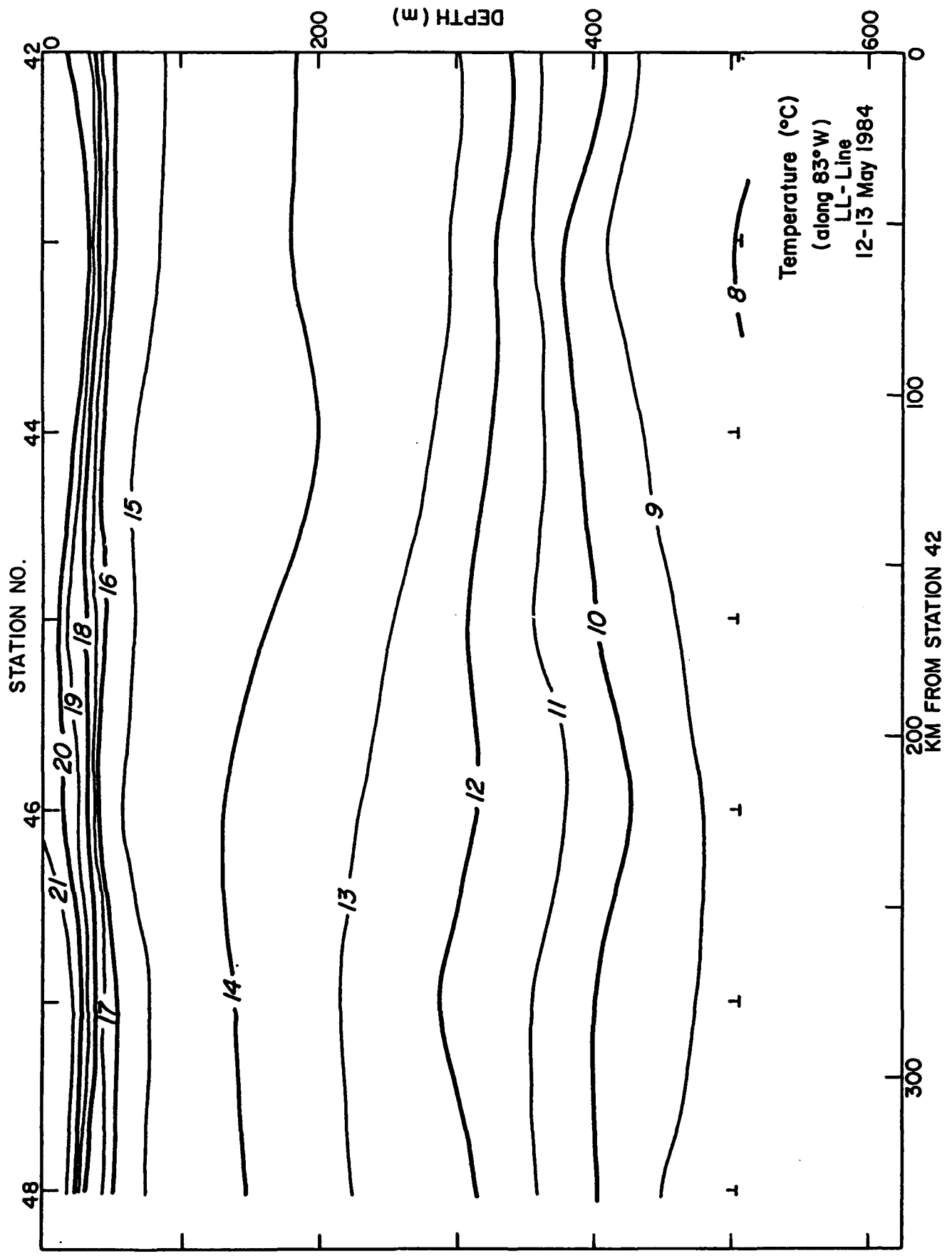
Date		Time	Station No.	Name	Location Lat.	Long.	Wind Dir. (°T)	Spd. (kts)	Pressure (mb)
May	13	0001	47	LL-6	6°30.1'S	83°00.0'W	120	10	1015.0
	13	0317	48	LL-7	7°00.0'S	82°59.9'	110	8	1016.0
	13	1429	49	A-21	6°59.9'S	84°59.7'	135	14	1018.0
	13	1805	50	A-20	6°30.2'S	84°59.4'	120	14	1016.0
May	14	0022	51	A-19	6°00.4'S	85°00.0'	130	12	1016.0
	14	0421	52	A-18	5°30.0'S	84°59.9'	110	9	1016.0
	14	0806	53	A-17	4°57.6'S	84°54.5'	120	8	1015.0
	14	1130	54	A-16	4°30.0'S	84°59.8'	140	10	1015.0
	14	1452	55	A-15	4°00.0'S	84°59.9'	110	10	1017.0
	14	1827	56	A-14	3°29.6'S	85°00.0'	120	12	1015.5
	14	2153	57	A-13	3°00.0'S	84°59.9'	140	8	1013.5
May	15	0125	58	A-12	2°28.7'S	85°00.0'	155	7	1015.0
	15	0732	59	A-11	1°58.1'S	85°03.1'	145	8	1014.5
	15	1159	60	A-10	1°29.9'S	85°00.0'	160	10	1015.0
	15	1519	61	A-9	0°59.7'S	84°59.8'	135	13	1015.0
	15	1902	62	A-8	0°29.8'S	84°59.6'	160	13	1013.5
	15	2231	63	A-7	0°00.4'S	85°00.4'	165	12	1013.0
May	16	0156	64	A-6	0°30.0'N	84°59.9'	165	8	1014.0
	16	0520	65	A-5	1°00.3'N	85°00.1'	145	5	1015.4
	16	0857	66	A-4	1°30.1'N	84°59.9'	VAR	2	1013.0
	16	1218	67	A-3	1°58.8'N	84°59.2'	180	10	1014.0
	16	1603	68	A-2	2°30.0'N	84°58.8'	165	10	1015.0
	16	1934	69	A-1	2°57.5'N	85°02.9'	195	8	1012.6
	16	2216	70	A-1	2°58.8'N	85°03.5'	190	11	1012.5

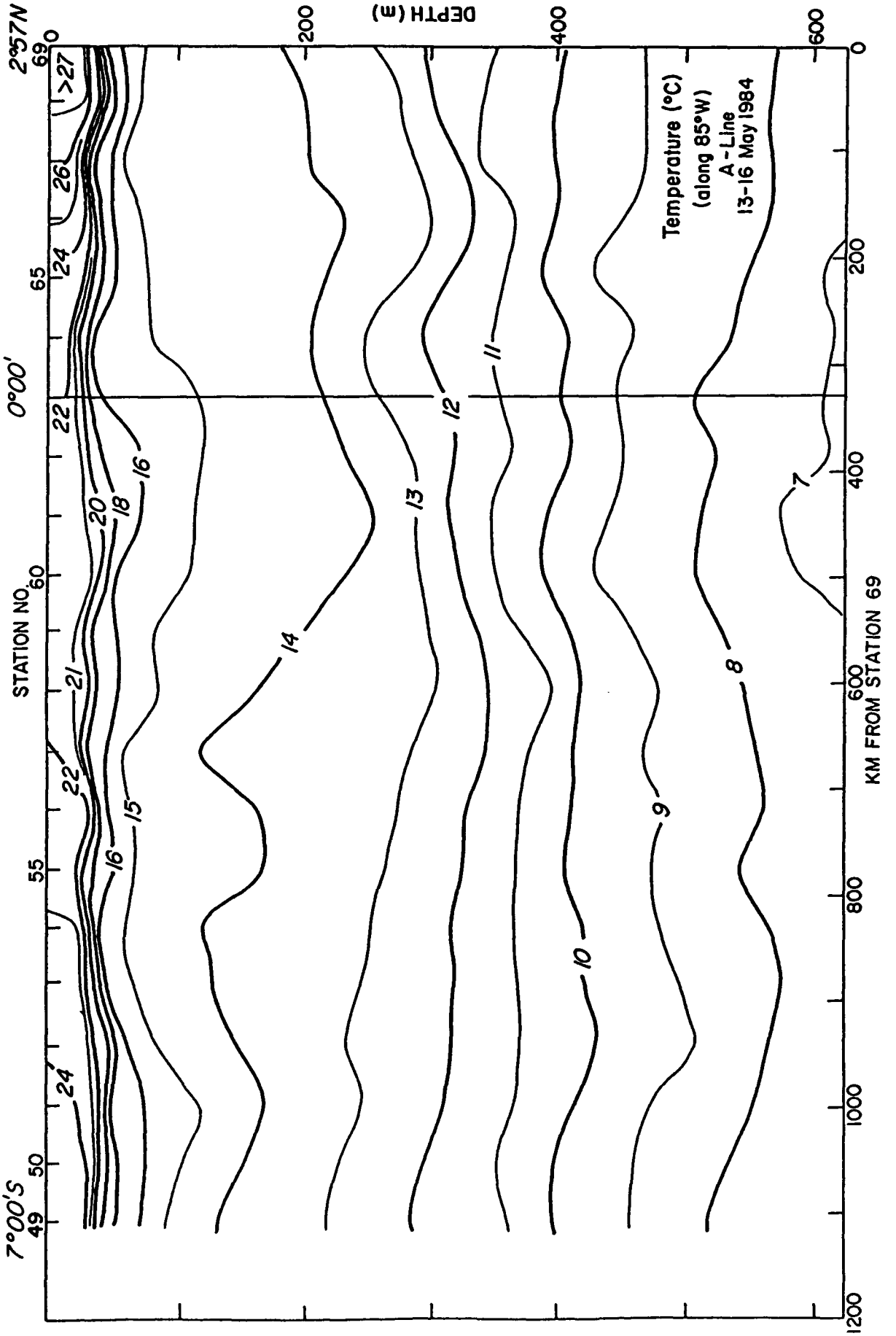

Temperature (°C)
Chimbote
D-Line
4-6 May 1984
DEPTH (m)
0
200
400
600
STATION NO.
2
4
6
7
10
12
14
16
KM FROM SHORE
0
100
200
300
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7

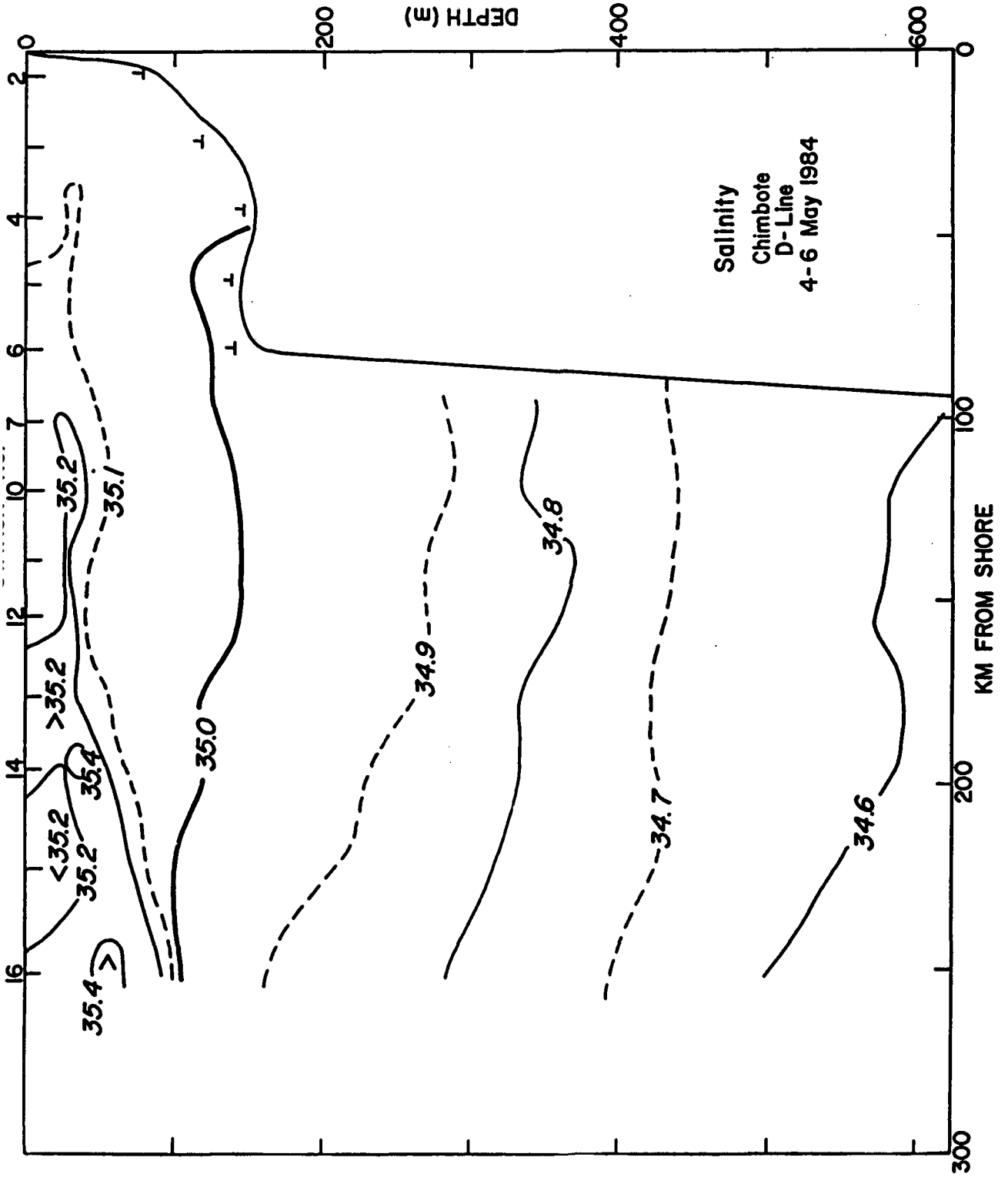

Temperature °C
Lobos de Afuera
C-Line
7 May 1984
DEPTH (m)
0
200
400
600
STATION NO.
24
22
20
18
KM FROM SHORE
0
100
200
T
18
19
20
>20
17
16
15
14
13
12
11
10
9
8
7
6

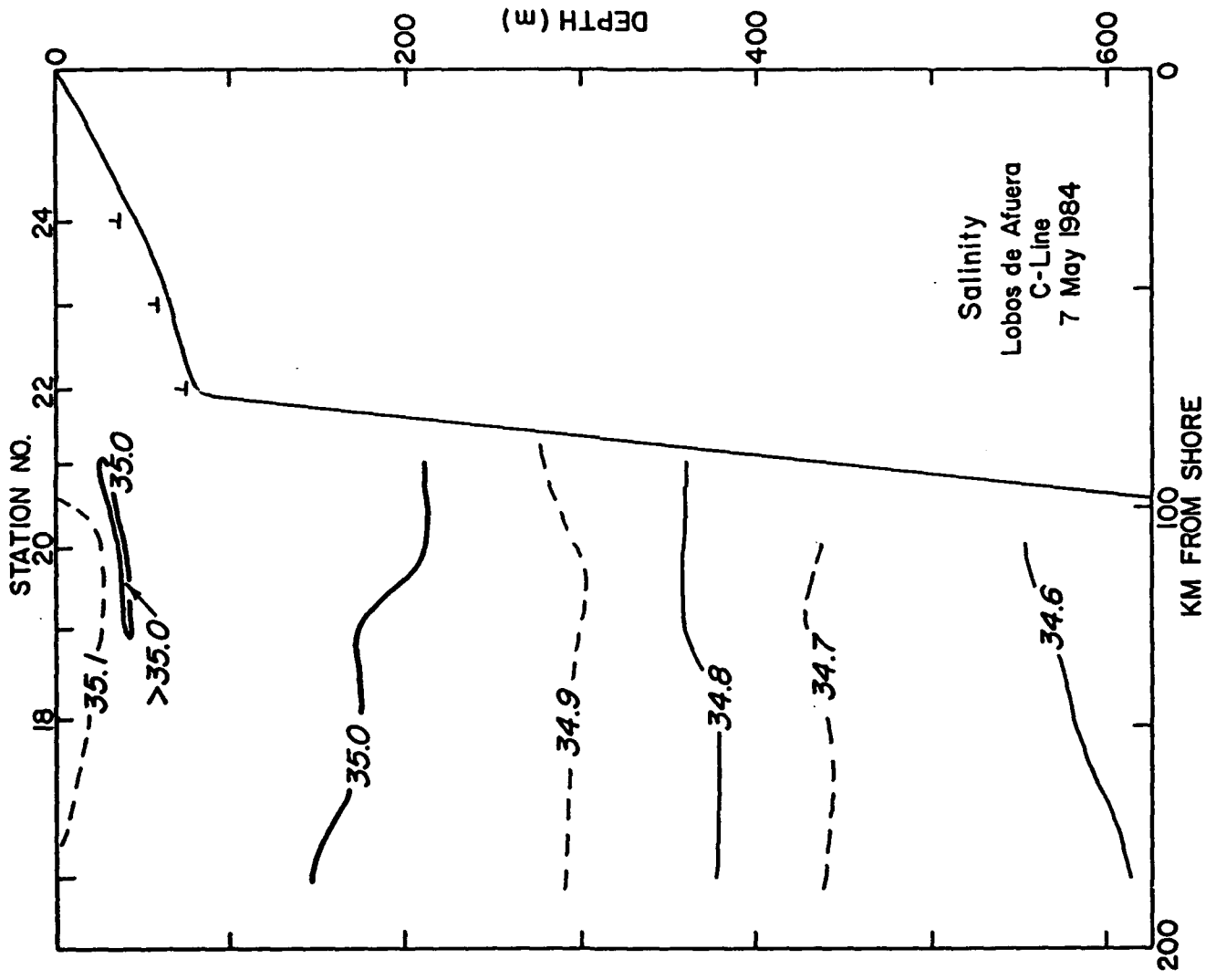

Temperature (°C)
(along 81° 30'W)
L-Line
7-9 May 1984
DEPTH (m)
0
200
400
600
STATION NO.
31
28
27
26
25
17
KM FROM STATION 31
0
100
200
300
20
19
18
17
16
15
14
13
12
11
10
9
8
7
7

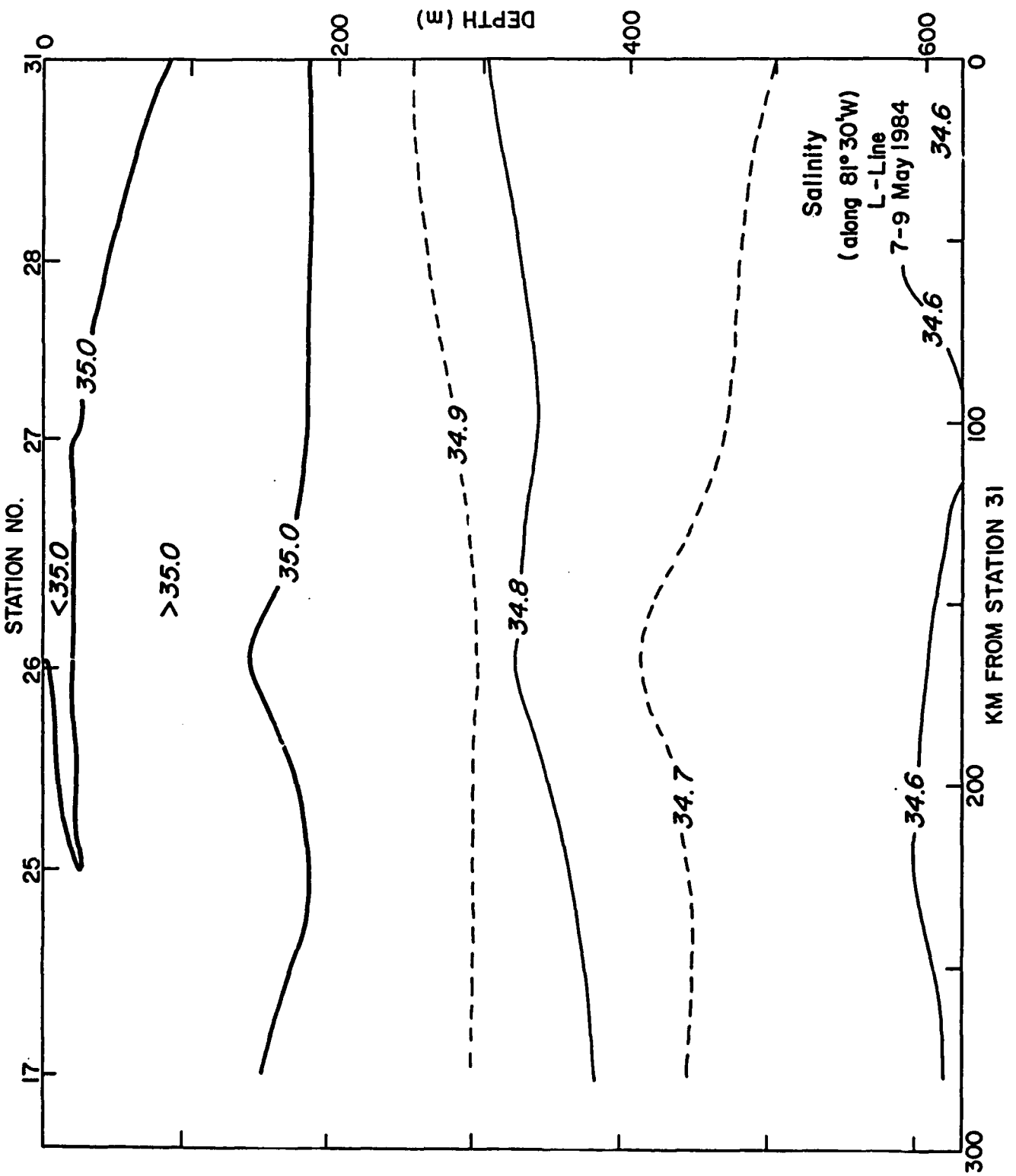

DEPTH (m)
0
200
400
600
Temperature (°C)
(along 5°S)
B-Line
9-11 May 1984
STATION NO.
29
31
33
35
37
39
40
KM FROM SHORE
0
100
200
300
400
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

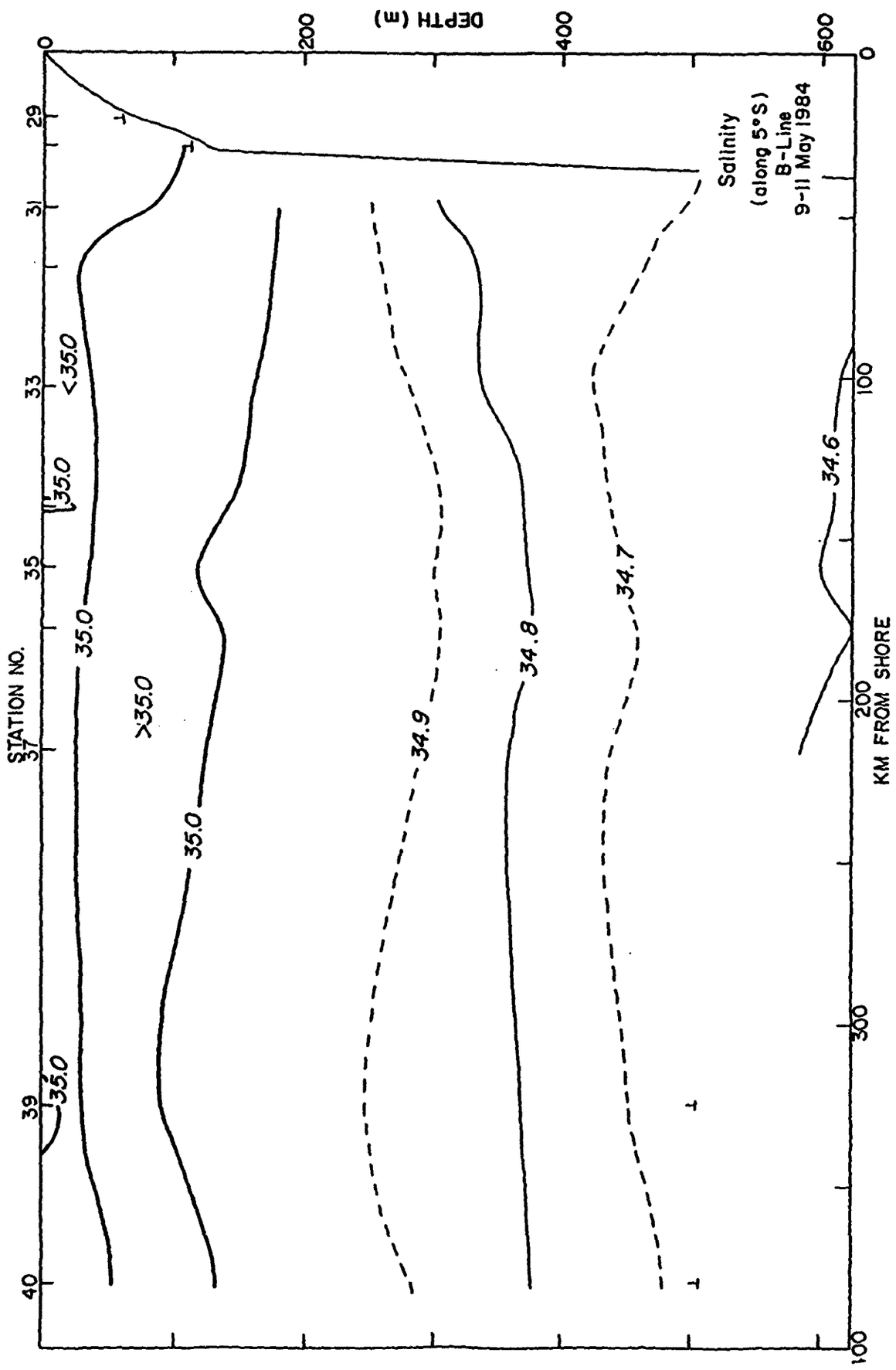

DEPTH (m)
0
200
400
600
STATION NO.
42
44
46
48
0
100
200
300
KM FROM STATION 42
Temperature (°C)
(along 83°W)
LL-Line
12-13 May 1984
8
9
10
11
12
13
14
15
16
17
18
19
20
21

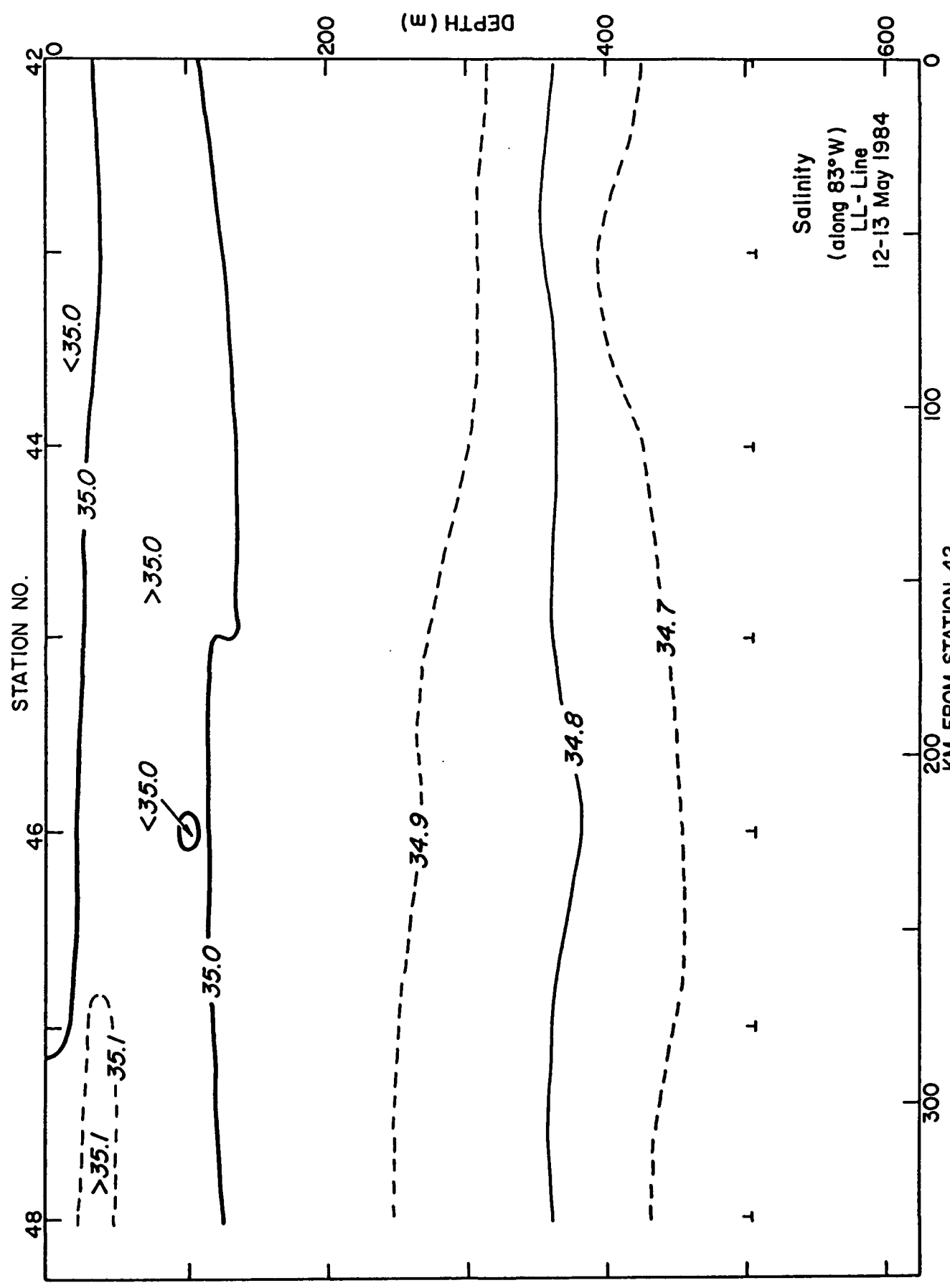

Temperature (°C)
(along 85°W)
A-Line
13-16 May 1984
DEPTH (m)
KM FROM STATION 69
STATION NO.
2°57'N
0°00'
7°00'S
>27
26
24
22
21
20
18
16
15
14
13
12
11
10
9
8
7

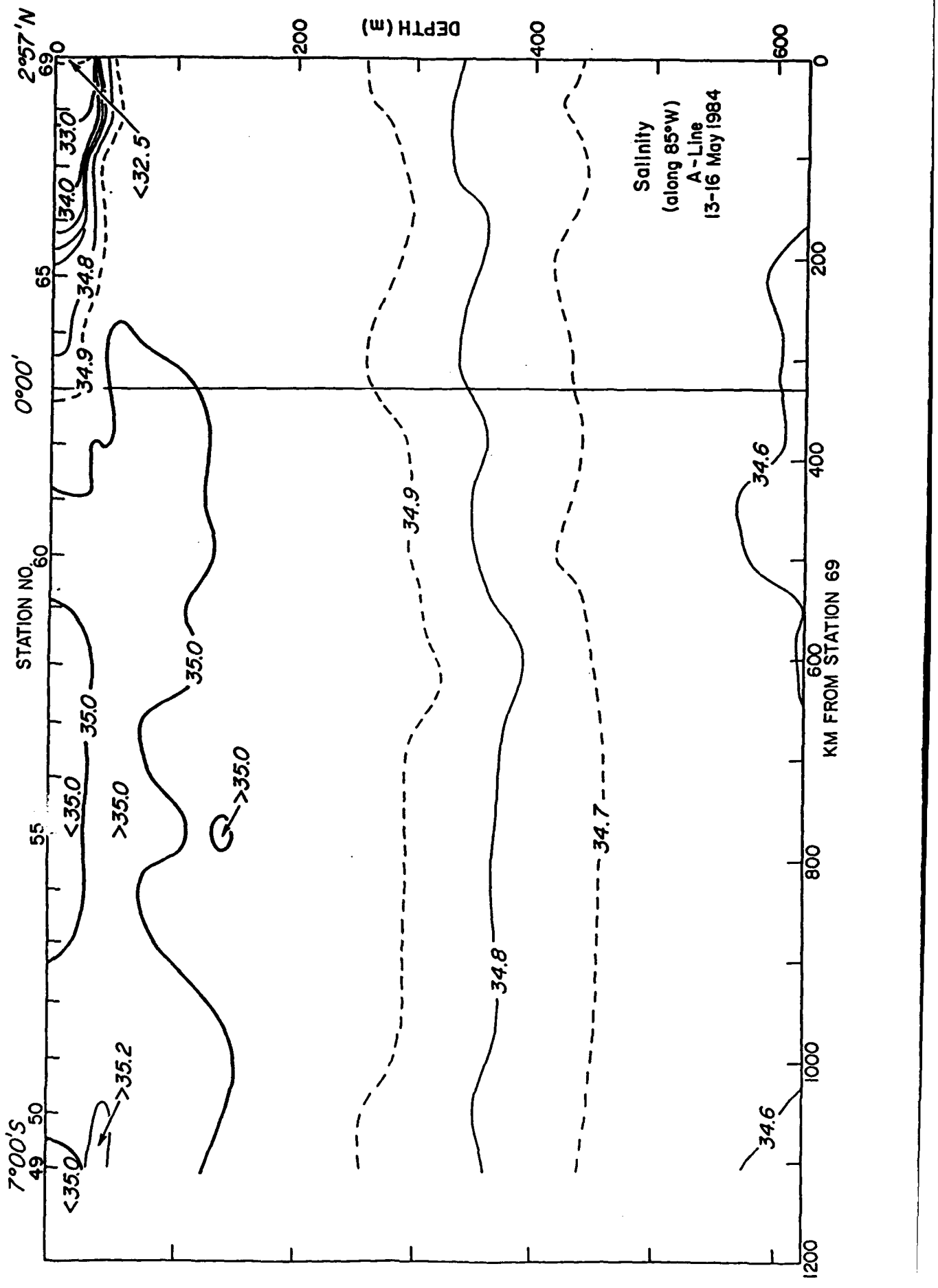

Salinity
Chimbote
D-Line
4-6 May 1984
DEPTH (m)
KM FROM SHORE
0
200
400
600
100
300
2
4
6
7
10
12
14
16
35.2
35.1
>35.2
35.0
35.4
<35.2
35.2
35.4
34.9
34.8
34.7
34.6

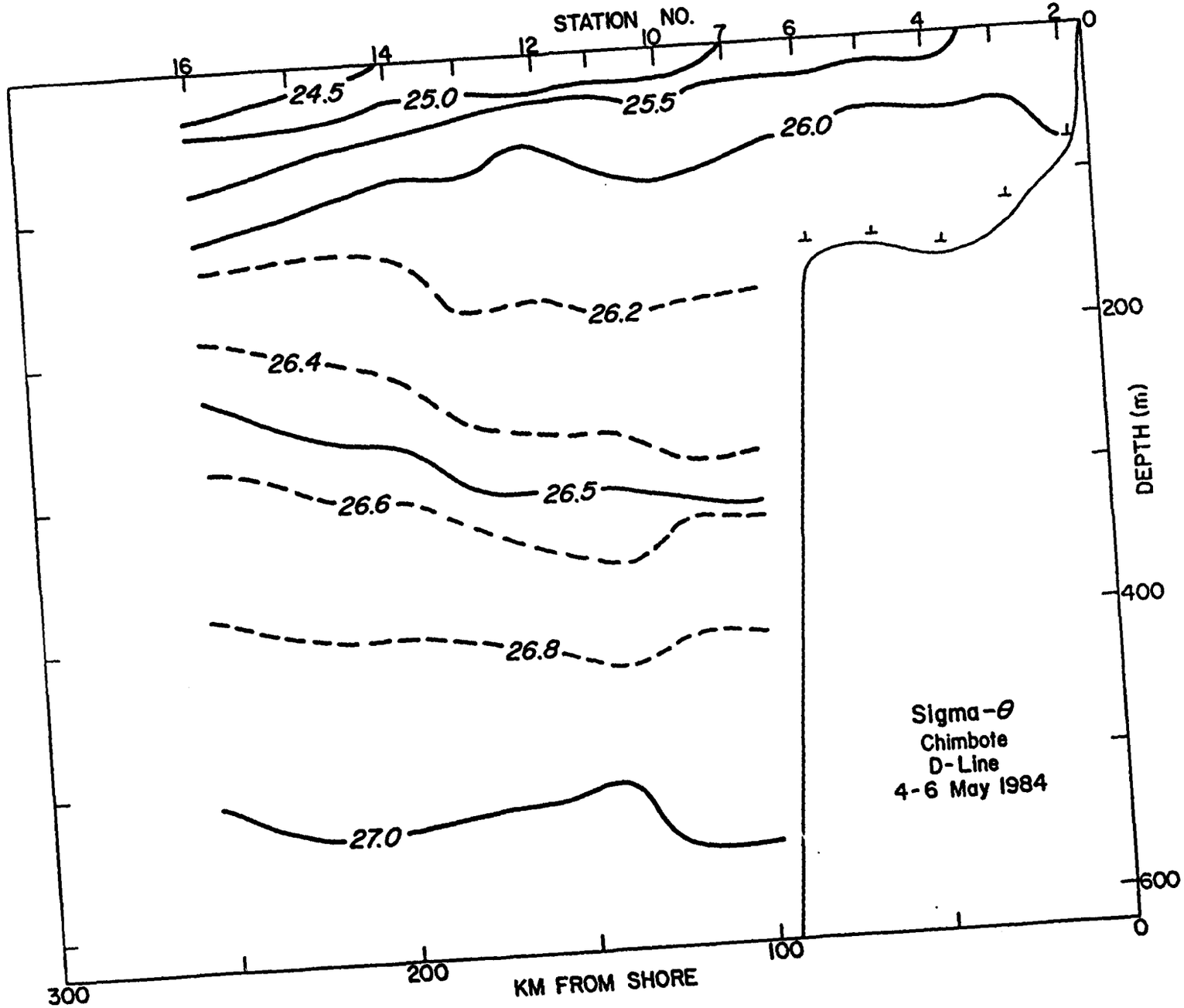

Salinity
Lobos de Afuera
C-Line
7 May 1984
STATION NO.
18
20
22
24
DEPTH (m)
0
200
400
600
KM FROM SHORE
0
100
200
35.1
35.0
>35.0
35.0
34.9
34.8
34.7
34.6

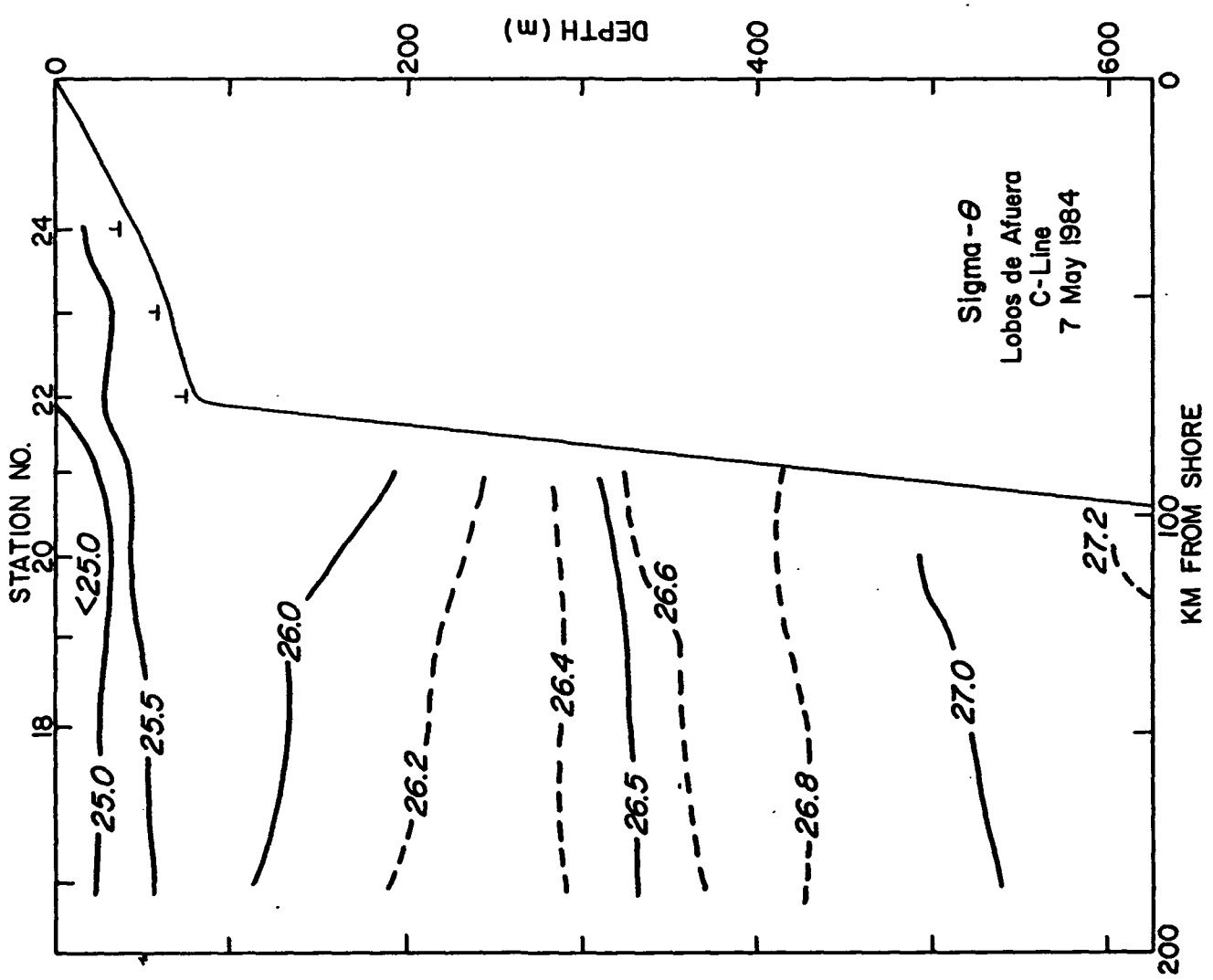

Salinity
(along 81°30'W)
L-Line
7-9 May 1984
DEPTH (m)
0
200
400
600
STATION NO.
31
28
27
26
25
17
KM FROM STATION 31
0
100
200
300
35.0
<35.0
>35.0
35.0
34.9
34.8
34.7
34.6
34.6
34.6

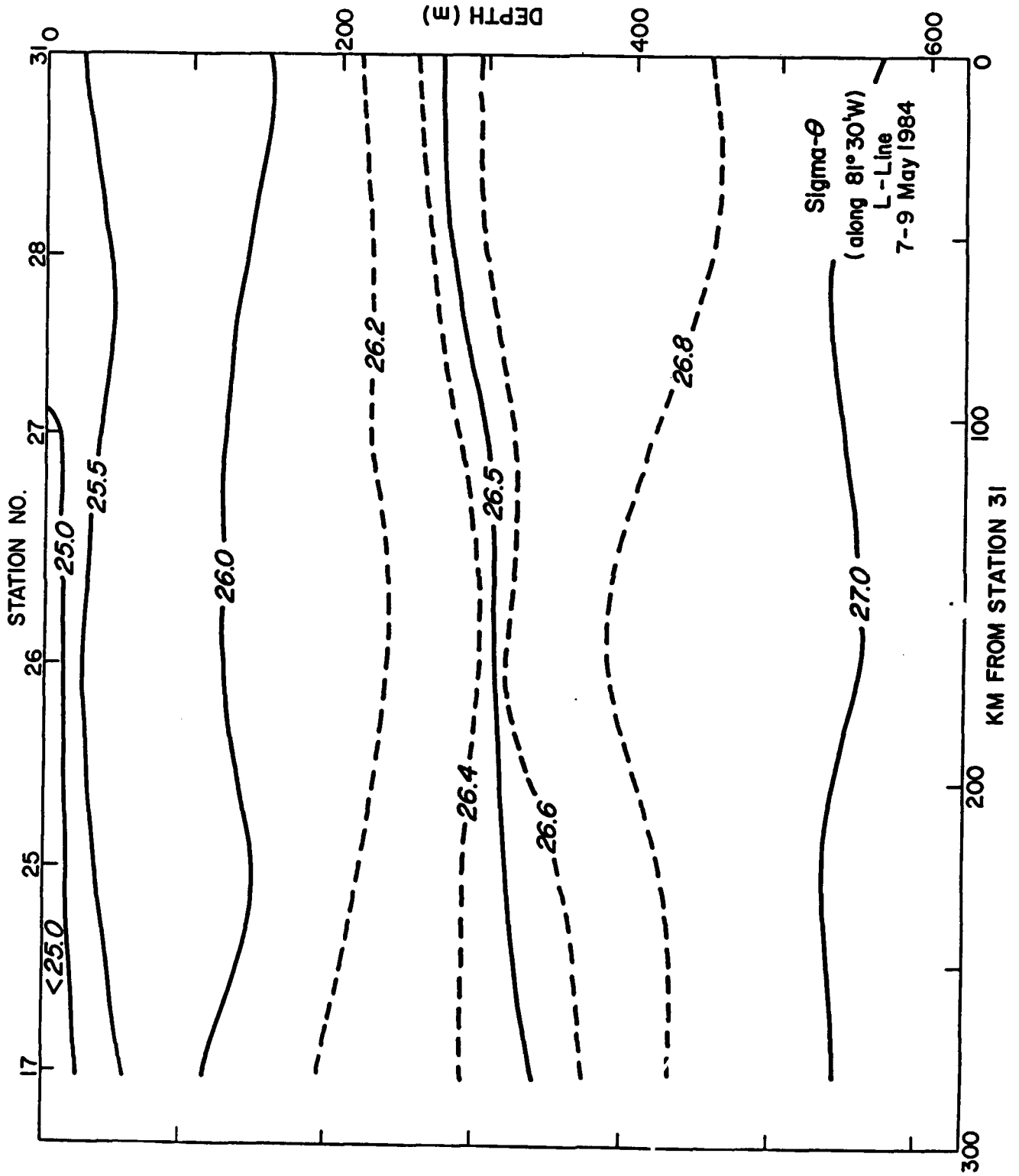

DEPTH (m)
0
200
400
600
Salinity
(along 5°S)
B-Line
9-11 May 1984
STATION NO.
29
31
33
35
37
39
40
<35.0
35.0
>35.0
35.0
35.0
34.9
34.8
34.7
34.6
100
200
300
100
KM FROM SHORE

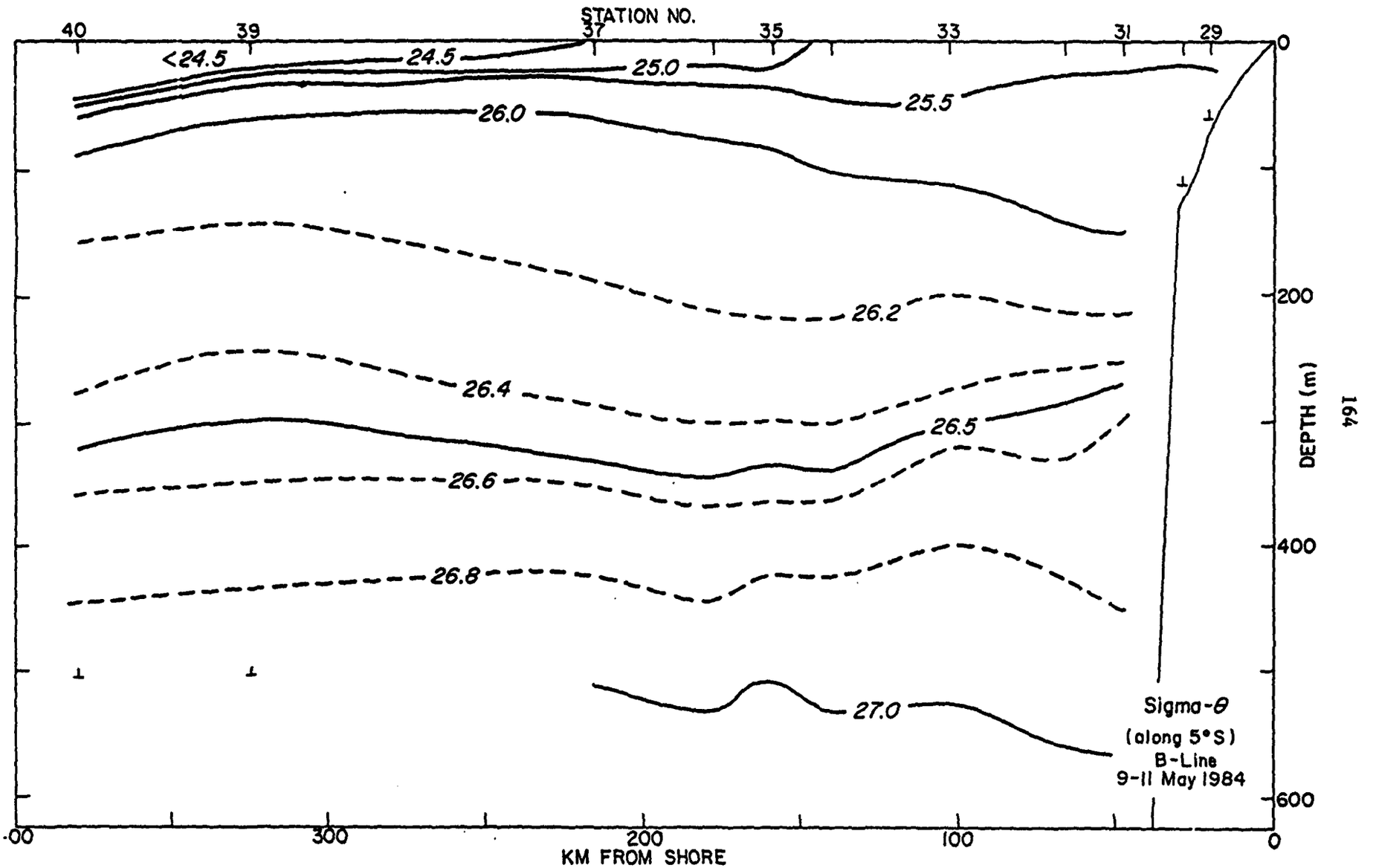

Salinity
(along 83°W)
LL-Line
12-13 May 1984
DEPTH (m)
0
200
400
600
STATION NO.
42
44
46
48
KM FROM STATION 42
0
100
200
300
<35.0
35.0
>35.0
<35.0
35.0
>35.1
35.1
34.9
34.8
34.7

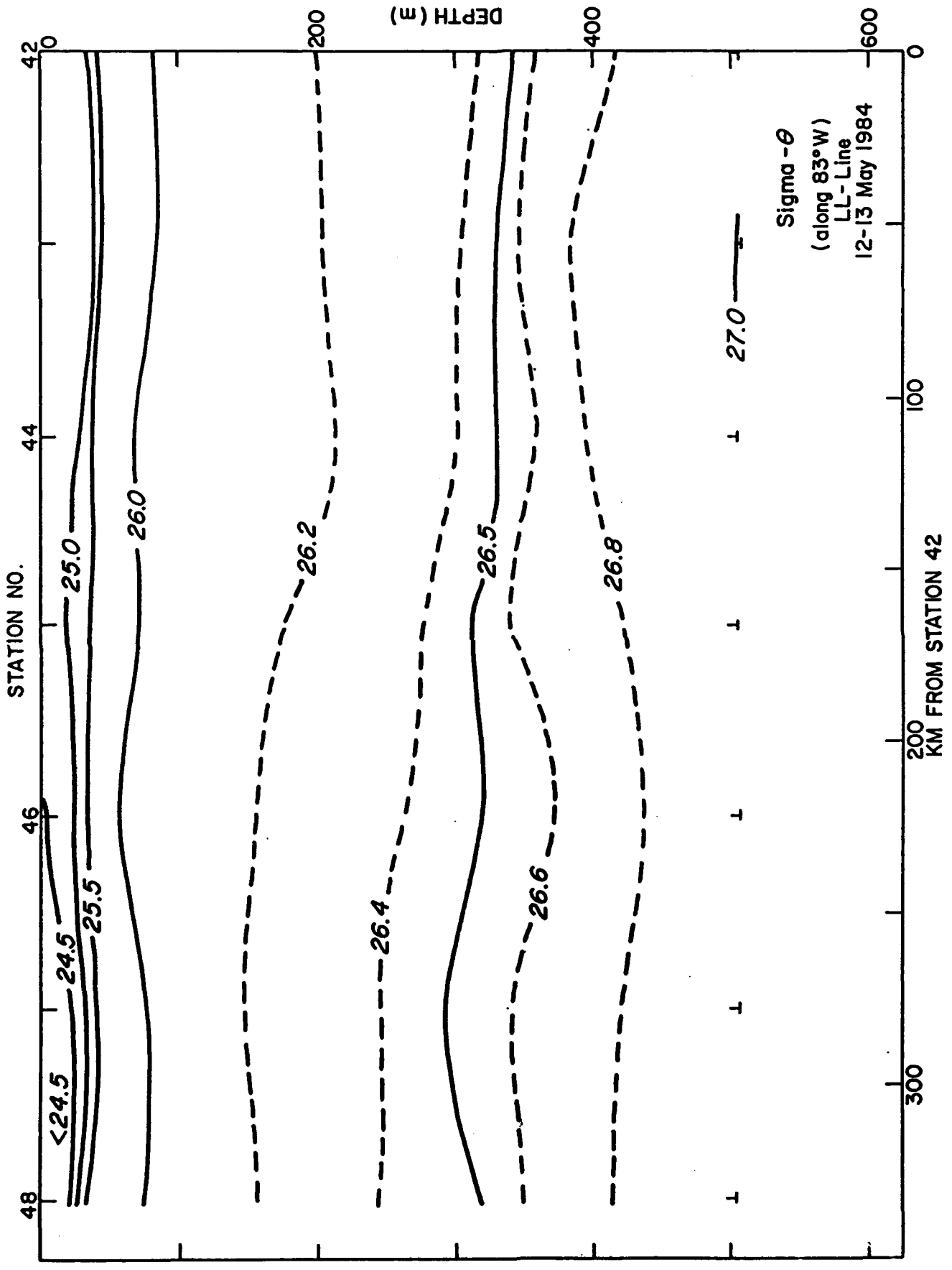

Salinity
(along 85°W)
A-Line
13-16 May 1984
DEPTH (m)
KM FROM STATION 69
STATION NO
2°57'N
0°00'
7°00'S
<32.5
33.0
34.0
34.8
34.9
35.0
>35.0
<35.0
>35.2
34.6
34.7

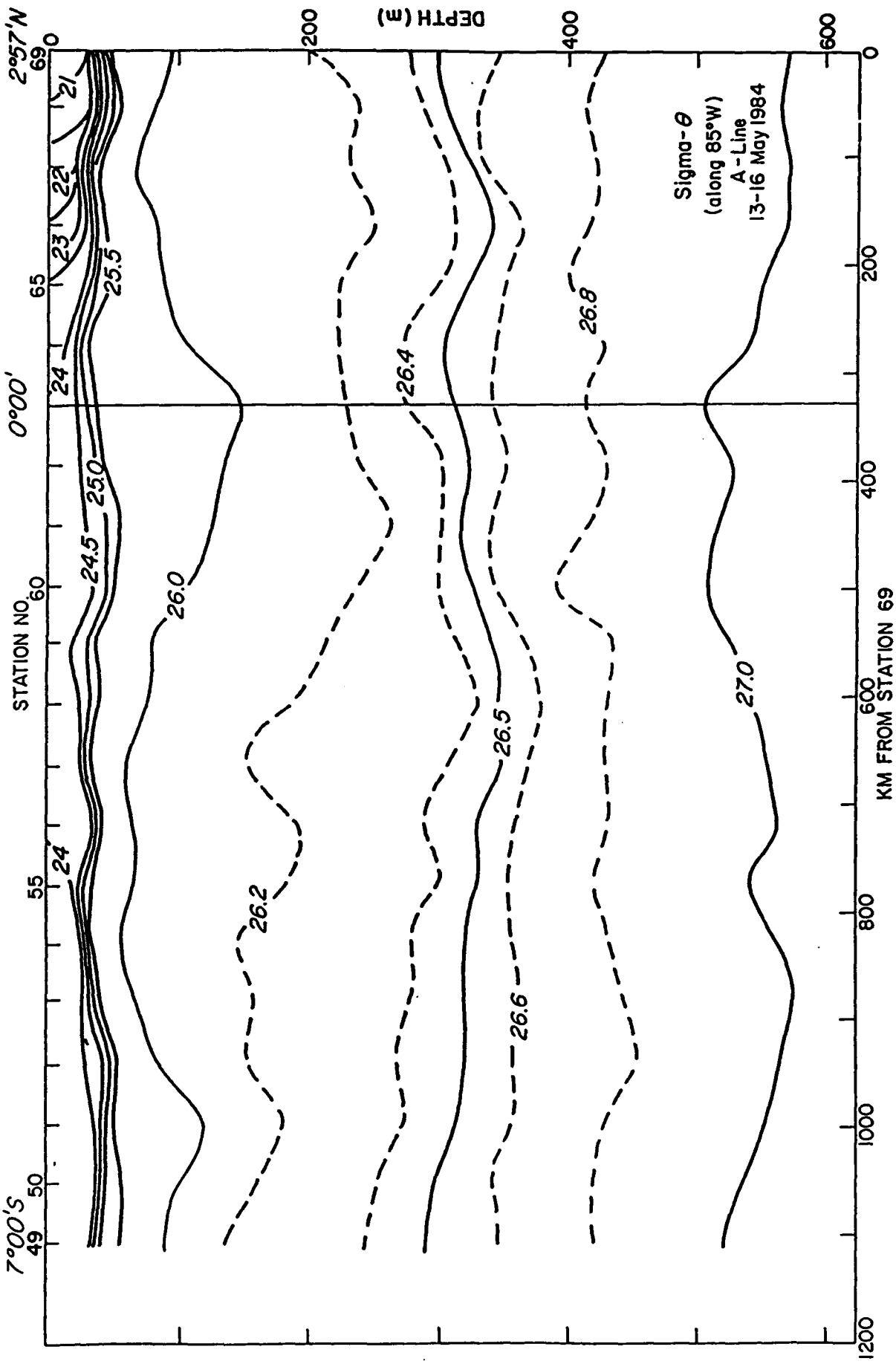

STATION NO.
16
14
12
10
7
6
4
2
0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
200
400
600
DEPTH (m)
Sigma-θ
Chimbote
D-Line
4-6 May 1984
300
200
100
0
KM FROM SHORE


DEPTH (m)
0
200
400
600
STATION NO.
24
22
20
18
0
100
200
KM FROM SHORE
Sigma-θ
Lobos de Afuera
C-Line
7 May 1984
<25.0
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
27.2


DEPTH (m)
0
200
400
600
STATION NO.
31
28
27
26
25
17
KM FROM STATION 31
0
100
200
300
Sigma-θ
(along 81° 30'W)
L-Line
7-9 May 1984
<25.0
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0


STATION NO.
40
39
37
35
33
31
29
<24.5
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
0
200
400
600
DEPTH (m)
Sigma-θ
(along 5°S)
B-Line
9-11 May 1984
300
200
100
0
KM FROM SHORE


DEPTH (m)
0
200
400
600
STATION NO.
42
44
46
48
0
100
200
300
KM FROM STATION 42
Sigma -θ
(along 83°W)
LL- Line
12-13 May 1984
27.0
<24.5
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8


2°57'N
0°00'
7°00'S
STATION NO
69
65
60
55
50
49
0
200
400
600
800
1000
1200
DEPTH (m)
KM FROM STATION 69
Sigma-θ
(along 85°W)
A-Line
13-16 May 1984
21
22
23
24
25.5
25.0
24.5
24
26.0
26.2
26.4
26.5
26.6
26.8
27.0

WL85L2

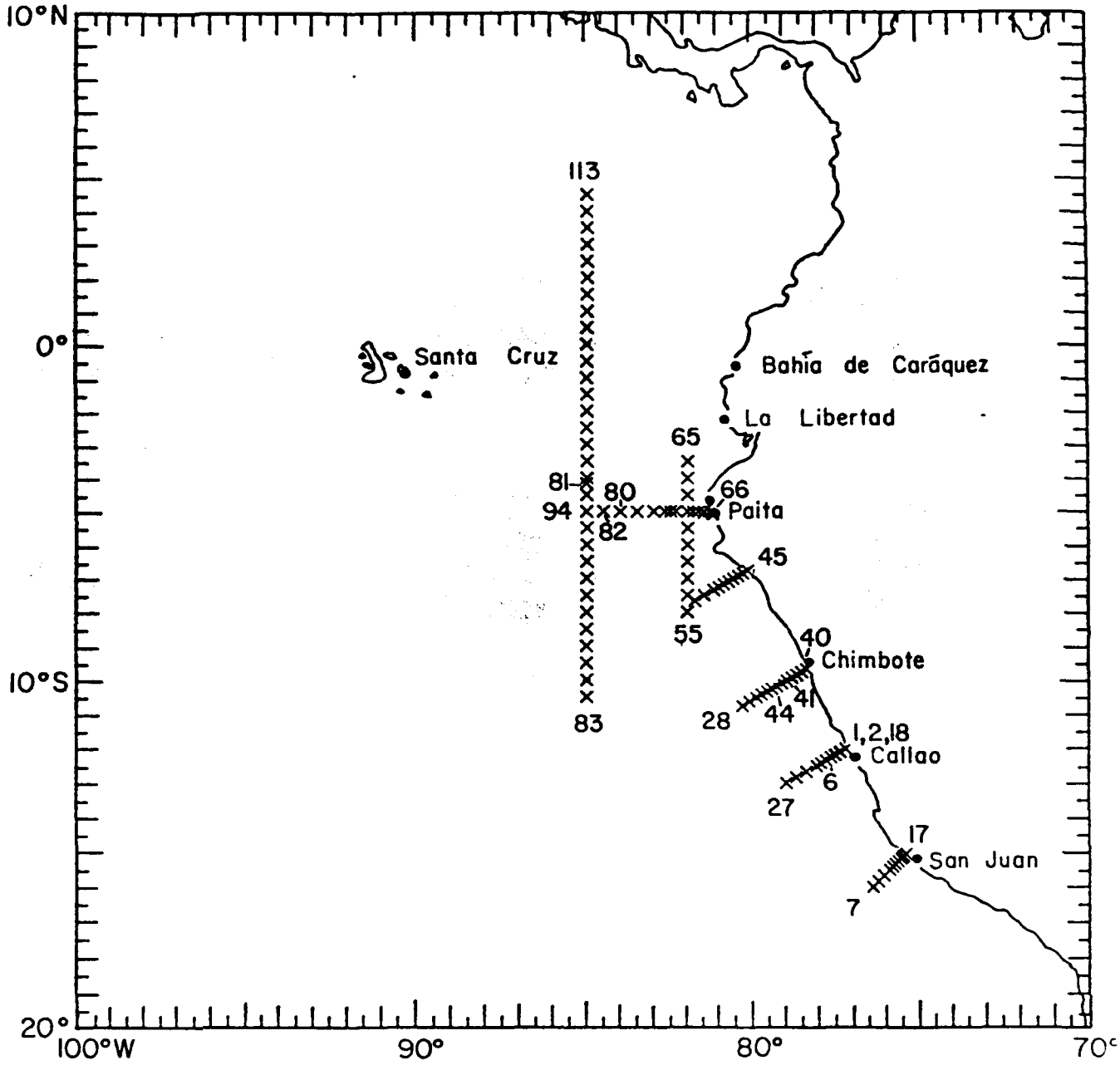


Figure 7. Location of CTD stations during WL85L2, 10-30 March 1985.

Table 8 List of stations occupied during WL85L2 showing date, time, location, wind speed and direction and atmospheric pressure.

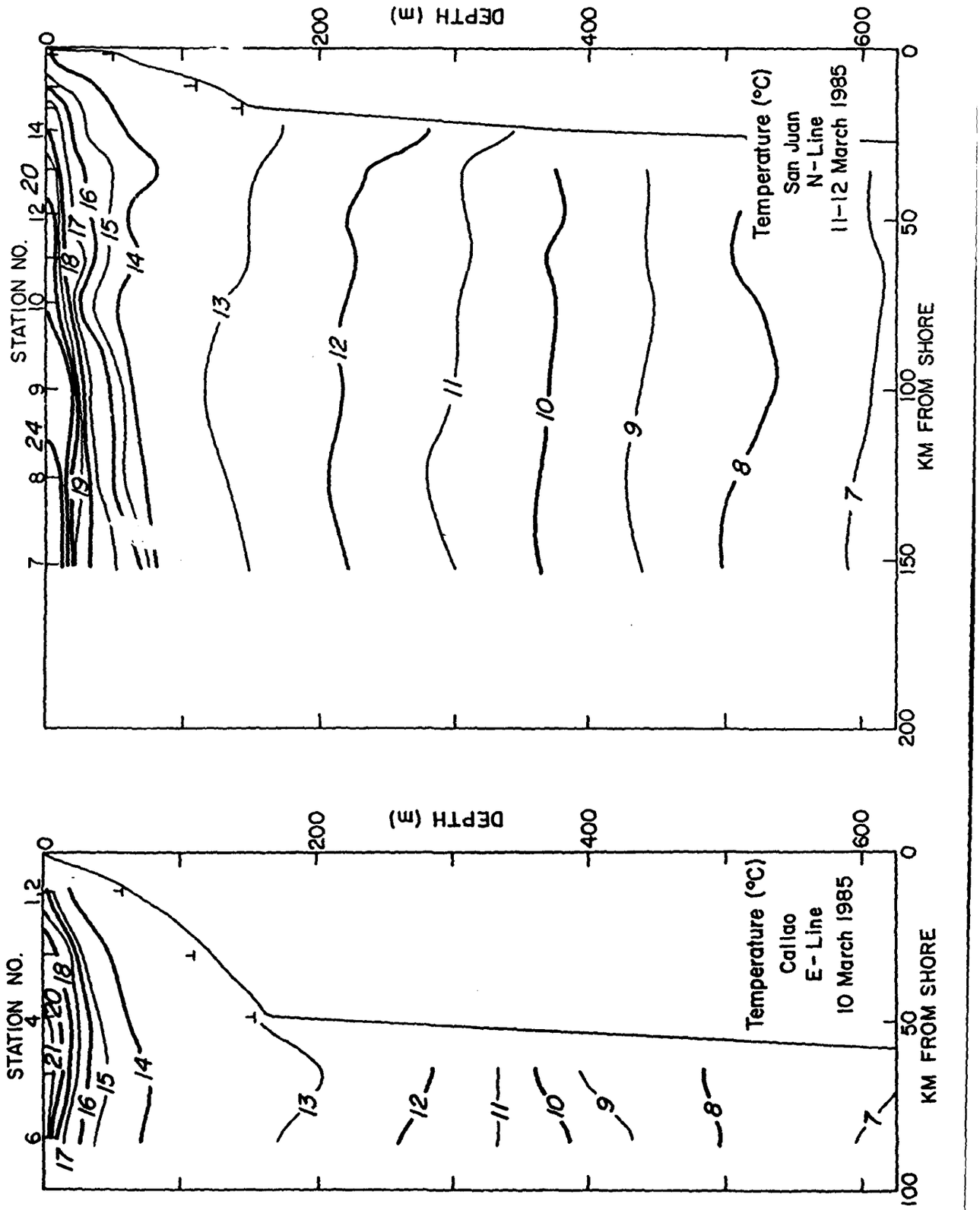
Date (1985)	Time (GMT)	Station No.	Name	Location Lat.	Long.	Wind Dir (°T)	Spd (kts)	Pressure (mb)
Mar 10	1326	1	E-1	12°00.0S	77°14.1W	150	8	1010.8
10	1357	2	E-1	12 00.0	77 14.1	150	8	1010.8
10	1549	3	E-2	12 05.0	77 23.0	--	calm	1010.1
10	1726	4	E-3	12 10.0	77 32.0	180	8	--
10	1900	5	E-4	12 15.0	77 40.0	180	11	1009.0
10	2116	6	E-5	12 20.0	77 49.0	160	10	1009.0
11	2022	7	N-12	16 00.1	76 25.0	140	12	1011.5
11	2303	8	N-11	15 50.1	76 15.0	140	13	1012.2
12	0122	9	N-10	15 40.1	76 05.0	140	14	1013.7
12	0403	10	N-8	15 30.2	75 55.2	140	14	1013.8
12	0550	11	N-7	15 25.0	75 50.0	135	9	1012.2
12	0733	12	N-6	15 20.0	75.45.0	140	8	1011.8
12	0937	13	N-5	15 15.0	75 40.0	155	6	1011.5
12	1128	14	N-4	15 11.0	75 35.0	150	9	1012.3
12	1239	15	N-3	15 08.5	75 32.6	145	11	1013.5
12	1346	16	N-2	15 06.0	75 30.1	170	12	1014.3
12	1455	17	N-1	15 02.6	75 26.2	180	3	1014.3
13	1225	18	E-1	12 00.0	77 14.1	210	10	1011.0
13	1418	19	E-2	12 06.4	77 25.2	170	16	1009.8
13	2058	20	E-3	12 11.1	77 33.7	170	11	1009.5
13	2219	21	E-4	12 14.9	77 40.0	170	10	1010.3
14	0017	22	E-5	12 20.0	77 48.9	160	10	1011.3
14	0229	23	E-6	12 25.0	77 58.0	150	16	1011.6
14	0426	24	E-7	12 30.0	78 06.0	150	16	1011.5
14	0728	25	E-8	12 40 0	78 24.1	165	9	1010.8
14	1025	26	E-9	12 50.0	78 41.9	135	14	1010.0
14	1534	27	E-10	13 00.1	78 59.9	140	10	1013.0
16	1100	28	D-12	10 45.0	80 19.9	140	8	1012.3
16	1331	29	D-11A	10 37.5	80 07.0	120	10	1014.0
16	1606	30	D-11	10 30.0	79 54.1	130	8	1014.0
16	1816	31	D-10	10 25.0	79 45.0	135	8	--
16	2040	32	D-9	10 20 0	79 35.0	145	8	1011.3
16	2301	33	D-8	10 15.0	79 27.0	150	8	1011.8
17	0113	34	D-7	10 10.0	79 18.1	140	11	1013.0
17	0328	35	D-6	10 05.0	79 09.1	150	8	1013.7
17	0522	36	D-5	10 00.0	79 00.0	170	7	1013.5
17	0709	37	D-4	9 55.0	78 51.0	135	7	1012.0
17	0844	38	D-3	9 50.0	78 42.0	140	5	1011.5
17	1033	39	D-2	9 45.0	78 33.0	110	4	1012.2
17	1203	40	D-1	9 39.9	78 24.0	--	calm	1013.4
18	0018	41	D-5	10 00.0	79 00.0	140	8	1012.5
18	0138	42	D-6	10 05.0	79 08.9	150	10	1013.0
18	0318	43	D-7	10 10.0	79 18.0	150	8	1013.8
18	0458	44	D-8	10 15.1	79 27.0	155	10	1013.7
19	1641	45	C-1	6 45.1	80 11.0	190	4	1014.3
19	1803	46	C-2	6 50.0	80 20.0	160	4	1013.6
19	1954	47	C-3	6 55.0	80 28.9	180	8	1012.5

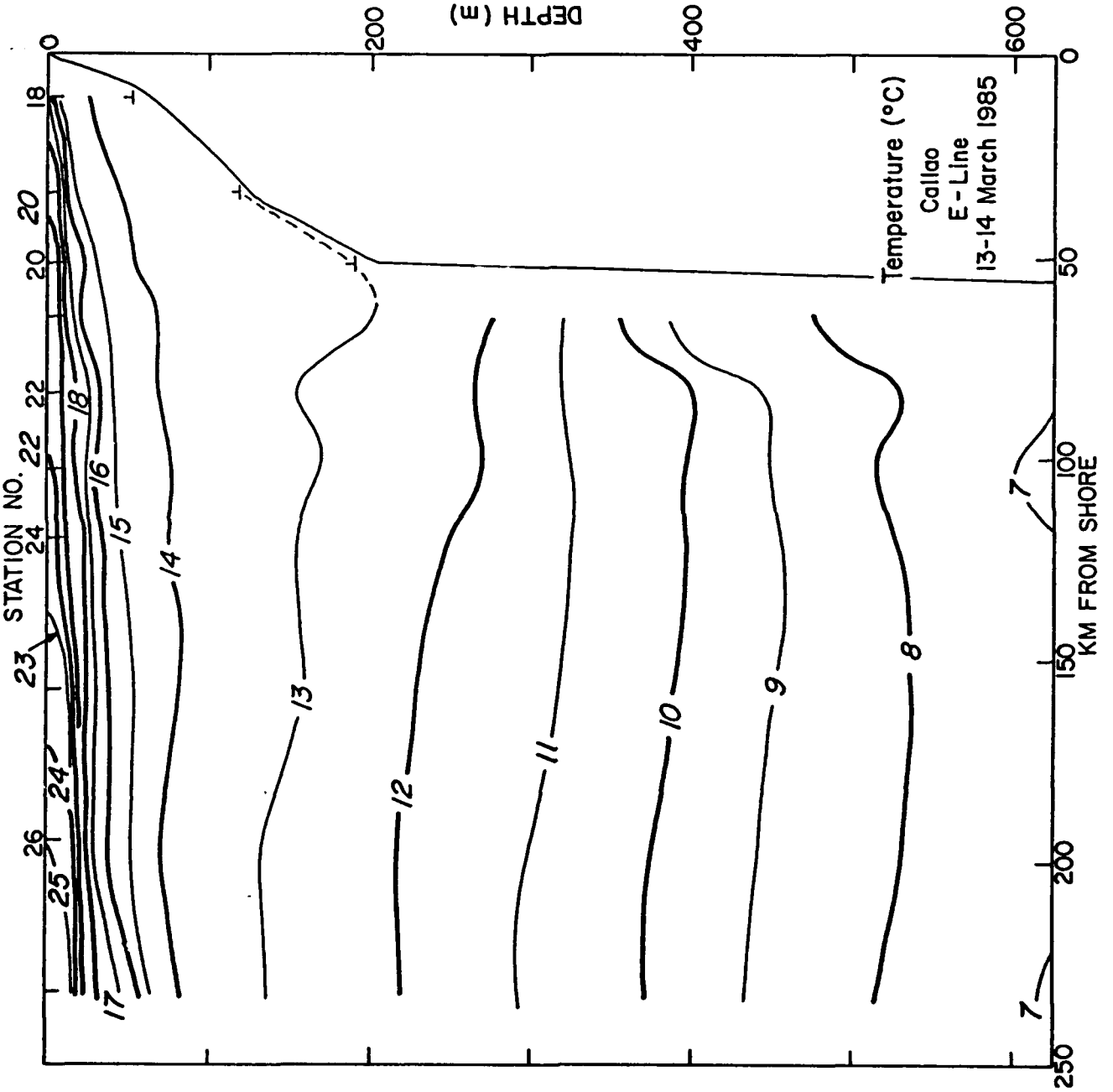
Table 8 cont'd.

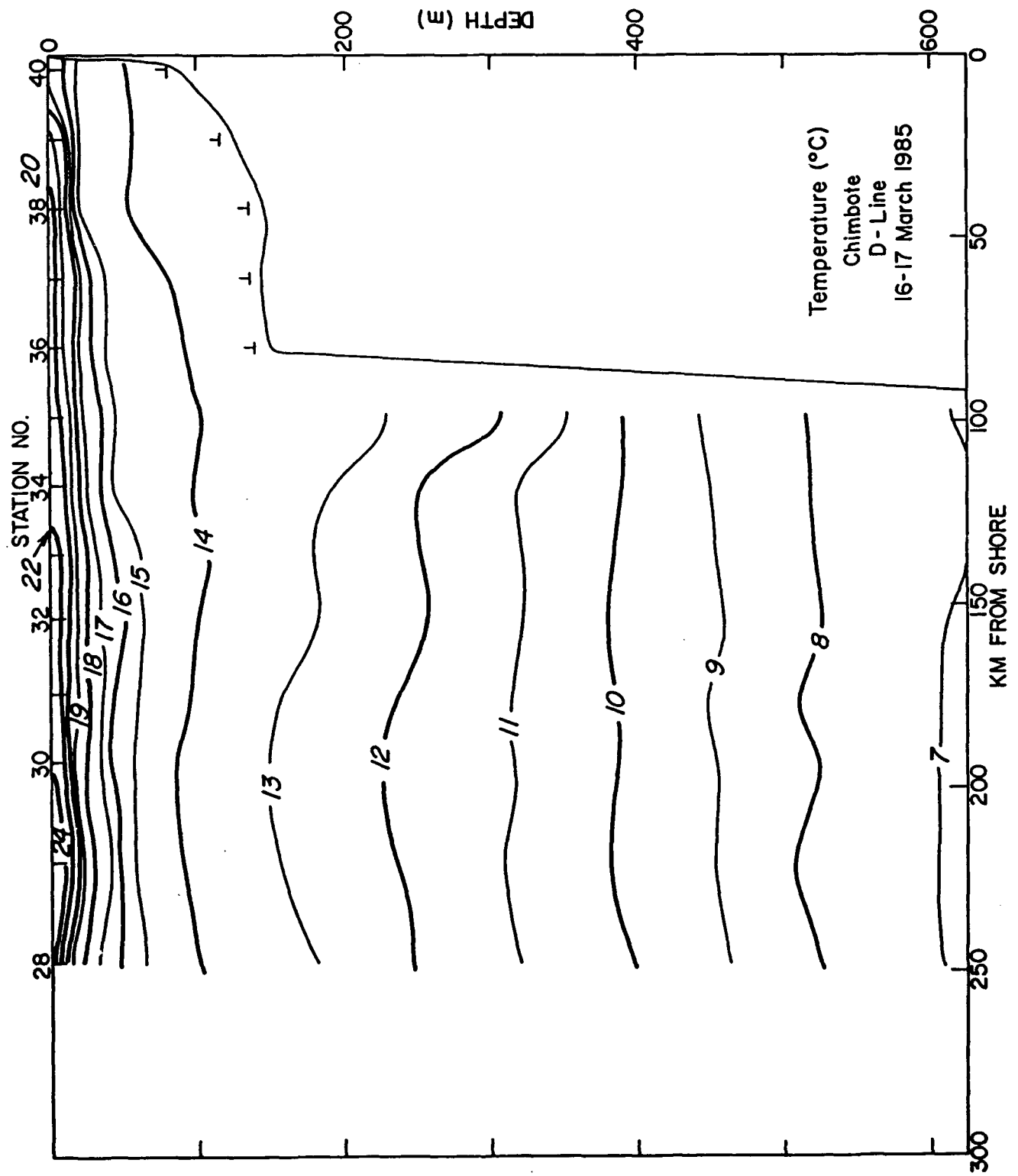
Date (1985)	Time (GMT)	Station No.	Name	Location Lat.	Location Long.	Wind Dir (°T)	Wind Spd (kts)	Pressure (mb)
Mar 19	1628	48	C-4	7 00.0S	80 37.9W	160	11	1011.8
19	2300	49	C-5	7°05.0	80 46.0	160	10	1011.8
20	0052	50	C-6	7 10.1	80 55.0	155	10	1013.3
20	0254	51	C-7	7 15.0	81 03.9	155	10	1014.5
20	0455	52	C-8	7 20.0	81 13.0	170	11	1014.5
20	0800	53	C-9	7 30.0	81 29.9	150	6	1013.5
20	1100	54	C-10	7 39.9	81 46.8	120	7	1013.3
20	1417	55	M-1	8 00.0	82 00.0	110	8	1014.8
20	1753	56	M-2	7 30.0	82 00.0	100	5	1014.0
20	2128	57	M-3	7 00.0	82 00.0	airs	--	1012.5
21	0108	58	M-4	6 30.1	82 00.0	--	calm	1013.0
21	0451	59	M-5	6 00.1	82 00.0	190	6	1014.5
21	0832	60	M-6	5 30.0	82 00.0	140	7	1013.0
21	1208	61	M-7	5 00.0	82 00.0	120	8	1013.5
21	1324	62	M-7	5 00.0	82 00.1	150	10	1014.2
21	1710	63	M-8	4 30.1	82 00.0	170	9	1013.2
21	2051	64	M-9	4 00.1	82 00.1	205	9	1010.4
22	0025	65	M-10	3 30.0	82 00.1	230	7	1011.6
22	1225	66	AB-66	5 05.0	81 16.0	080	8	1013.0
22	1370	67	AB-67	5 05.0	81 12.0	070	9	1013.6
22	2020	68	B-11	5 00.0	81 15.0	240	13	1009.0
22	2123	69	B-10	5 00.0	81 20.0	230	14	1008.0
22	2239	70	B-9	5 00.0	81 30.0	235	10	1009.2
23	0039	71	B-8	5 00.0	81 40.0	215	7	1010.8
23	0230	72	B-7	5 00.0	81 50.0	--	calm	1012.0
23	1353	73	5S SL	5 03.8	81 30.4	100	9	1014.0
23	1719	74	B-7	5 00.0	82 00.1	170	9	1013.0
23	2021	75	B-6	4 59.9	82 20.2	205	7	1010.2
23	2206	76	B-5A	4 59.9	82 30.0	175	8	1010.0
24	0006	77	B-5	4 59.9	82 40.0	170	10	1010.5
24	0236	78	B-4	4 59.9	83 00.0	170	9	1012.2
24	0606	79	B-3	5 00.0	83 30.0	160	10	1012.0
24	0946	80	B-2	5 00.0	84 00.0	150	7	1009.8
24	1856	81	85-W	4 09.8	85 00.7	080	8	1010.0
25	0114	82	B-1	4 59.9	84 30.1	--	calm	1009.6
26	0611	83	A-28	10 29.9	85 00.0	130	13	1012.7
26	1000	84	A-27	10 00.1	84 59.9	110	17	1011.9
26	1354	85	A-26	9 30.1	85 00.0	130	14	1013.5
26	1714	86	A-25	9 00.0	85 00.0	120	11	1013.2
26	2100	87	A-24	8 30.0	85 00.0	140	10	1011.3
27	0035	88	A-23	8 00.1	85 00.0	130	9	1012.1
27	0413	89	A-22	7 30.1	85 00.0	130	10	1014.1
27	0746	90	A-21	7 00.0	85 00.0	80	12	--
27	1155	91	A-20	6 30.0	85 00.0	85	9	1013.0
27	1538	92	A-19	6 00.1	85 00.0	90	10	1014.3
27	1919	93	A-18	5 29.9	85 00.0	90	11	1012.0
27	2254	94	A-17	5 00.0	85 00.0	100	11	1010.8
28	0337	95	A-16	4 30.1	85 00.0	120	10	1013.0
28	0602	96	A-15	4 00.0	85 00.1	130	11	1013
28	0948	97	A-14	3 30.0	85 00.0	130	5	1011.4

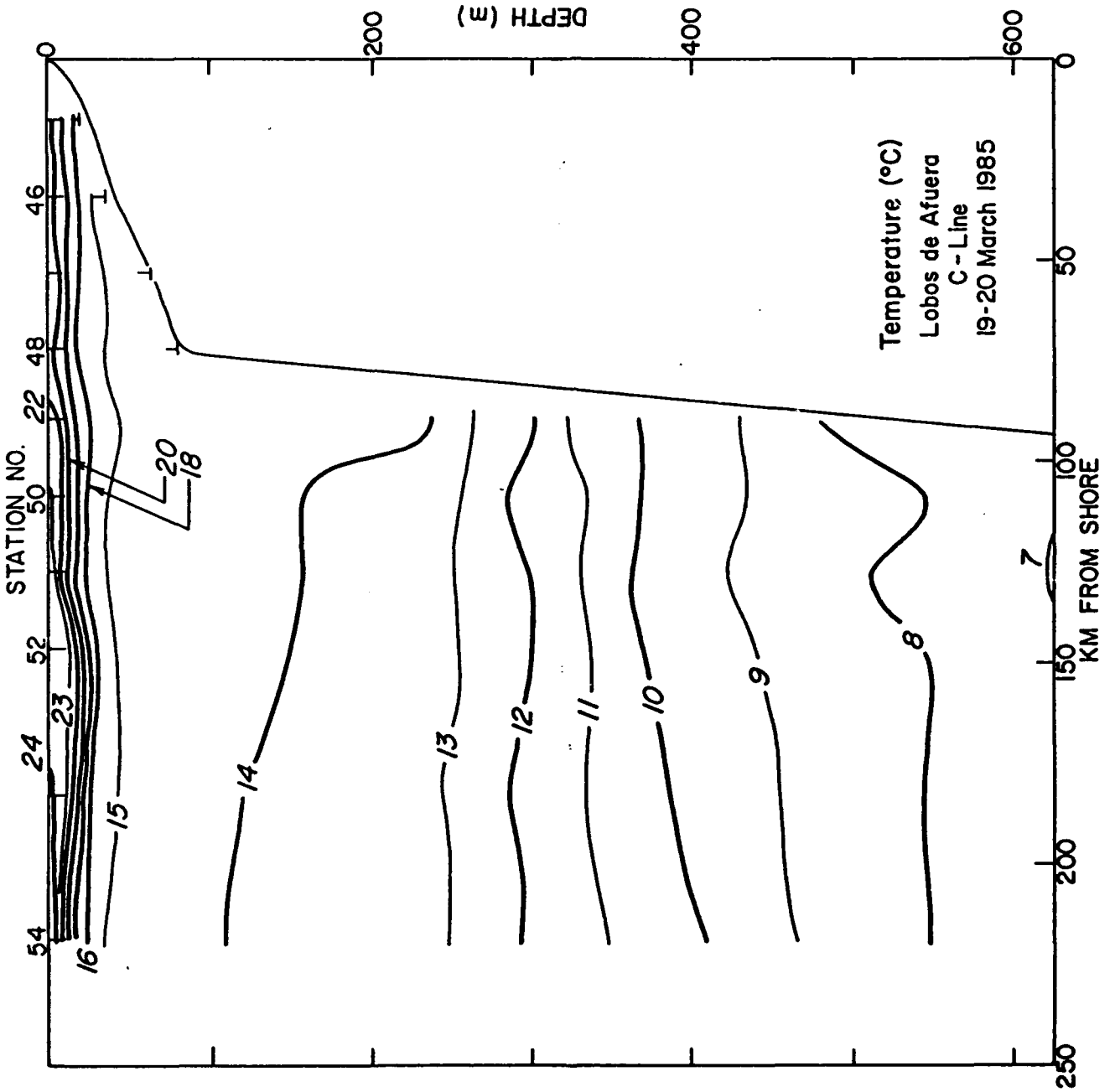
Table 8 cont'd.

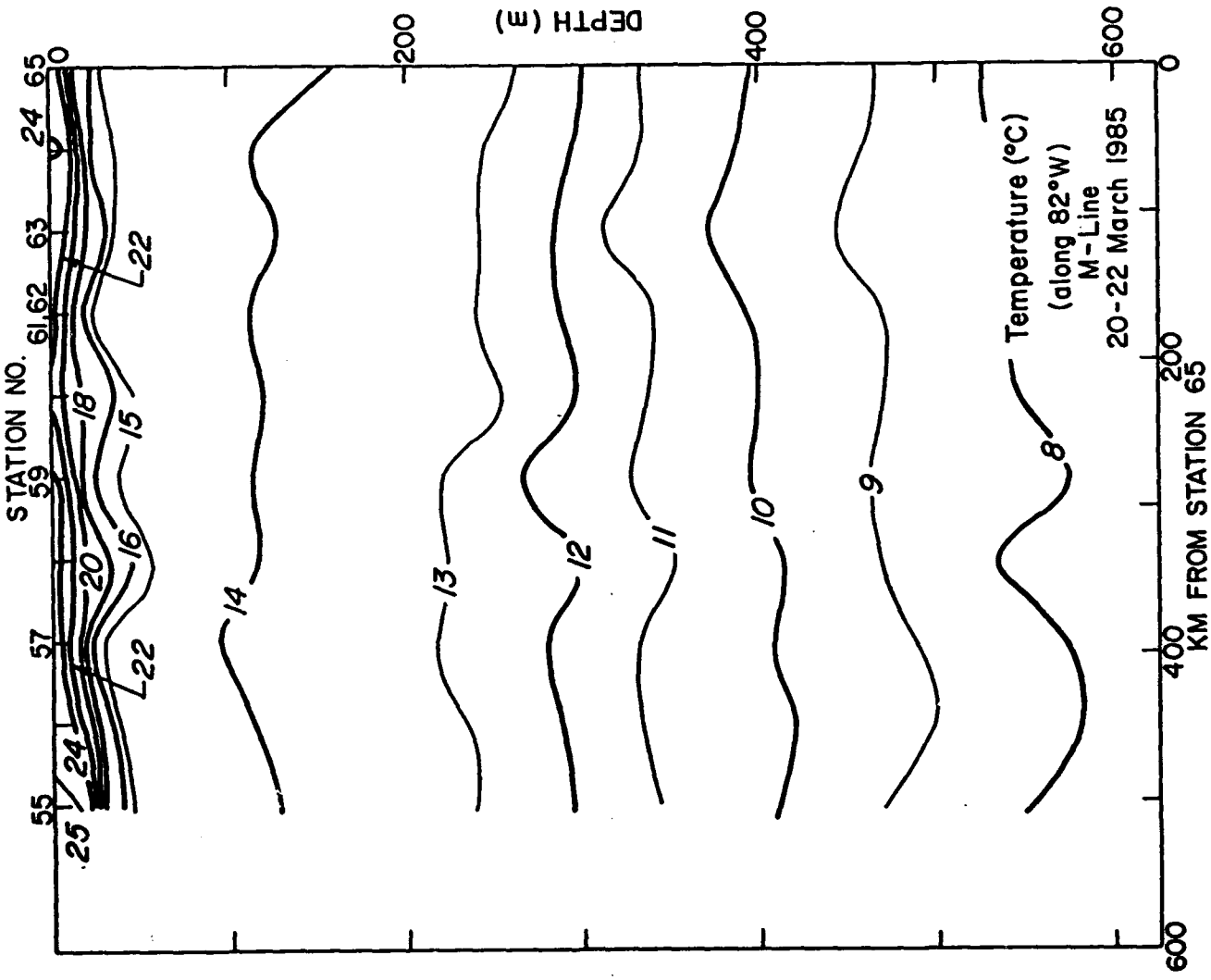
Date (1985)	Time (GMT)	Station No.	Name	Location Lat.	Long.	Wind Dir (°T)	Spd (kts)	Pressure (mb)
Mar 28	1316	98	A-13	3°00.1S	85°00.0W	150	10	1012.6
28	1707	99	A-12	2 30.0S	85 00.1	110	14	1013.0
28	2111	100	A-11	2 00.1S	85 00.1	135	10	1010.0
29	0123	101	A-10	1 30.1S	85 00.0	140	7	1011.5
29	0436	102	A-9	1 00.1S	85.00.0	140	8	1013.5
29	0810	103	A-8	0 30.1S	85.00.0	135	10	1011.0
29	1143	104	A-7	0 00.1N	85 00.1	150	10	1011.1
29	1517	105	A-6	0 30.0N	85 00.0	170	8	1012.6
29	1955	106	A-5	0 59.9N	85 00.0	140	7	1009.7
29	2346	107	A-4	1 30.0N	85 00.0	115	10	1009.8
30	0320	108	A-3	2 00.0N	85 00.0	130	12	1012.1
30	0651	109	A-2	2 29.9N	85 00.1	130	10	1012.0
30	1022	110	A-1	2 59.9N	85 00.0	150	7	1011.2
30	1414	111	A1-A	3 29.8N	85 00.0	120	10	1012.3
30	1780	112	A1-B	3 59.9N	85 00.1	150	7	1010.0
30	2138	113	A1-C	4 29.9N	85 00.0	160	4	1009.3

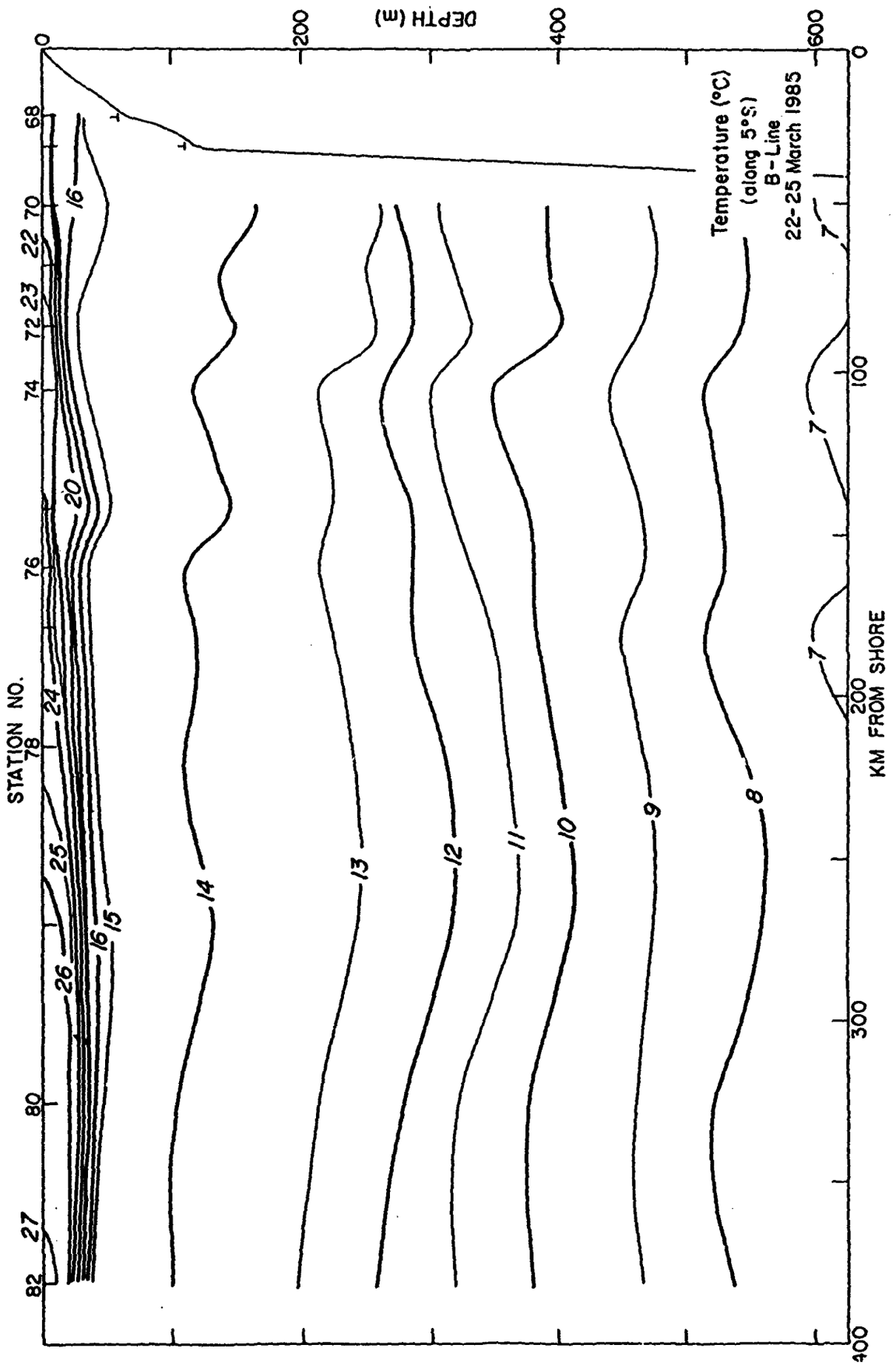

Temperature (°C)
Callao
E- Line
10 March 1985
DEPTH (m)
KM FROM SHORE
STATION NO.
Temperature (°C)
San Juan
N- Line
11-12 March 1985
DEPTH (m)
KM FROM SHORE
STATION NO.

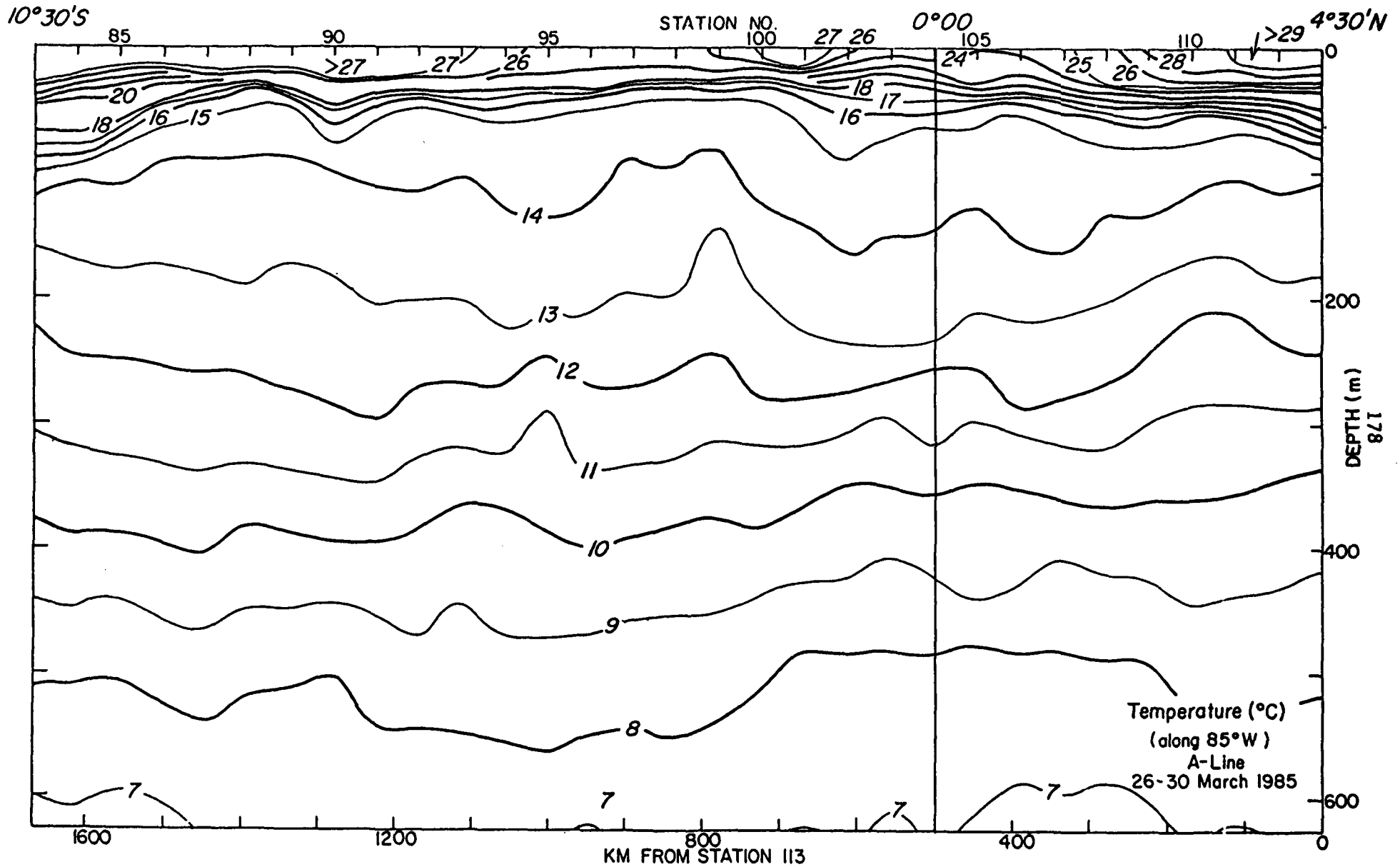

Temperature (°C)
Callao
E-Line
13-14 March 1985
DEPTH (m)
0
200
400
600
STATION NO.
18
20
22
24
26
23
25
KM FROM SHORE
0
50
100
150
200
250
7
8
9
10
11
12
13
14
15
16
17
18

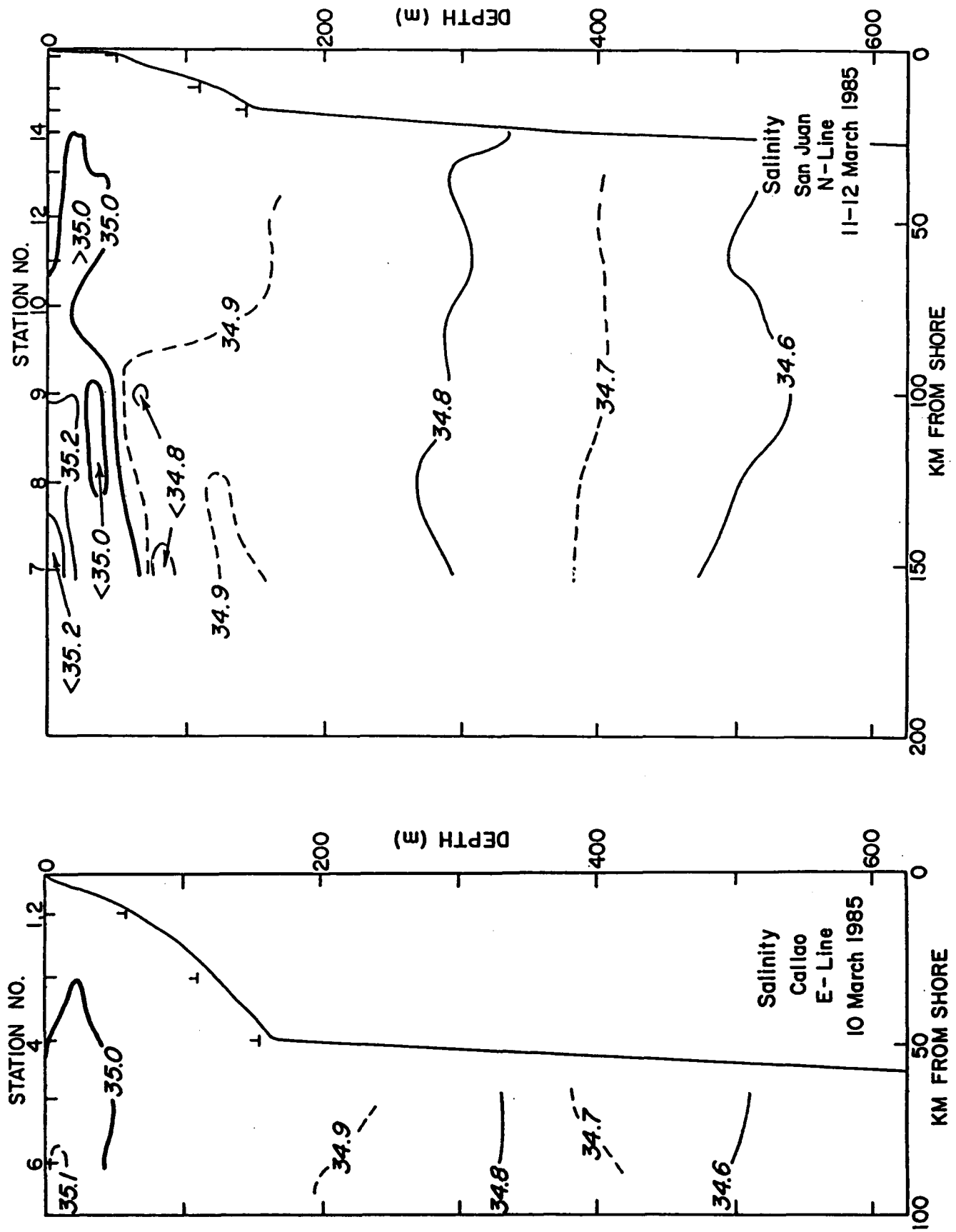

DEPTH (m)
0
200
400
600
Temperature (°C)
Chimbote
D - Line
16-17 March 1985
STATION NO.
40
38
36
34
32
30
28
20
22
24
0
50
100
150
200
250
300
KM FROM SHORE
7
8
9
10
11
12
13
14
15
16
17
18
19

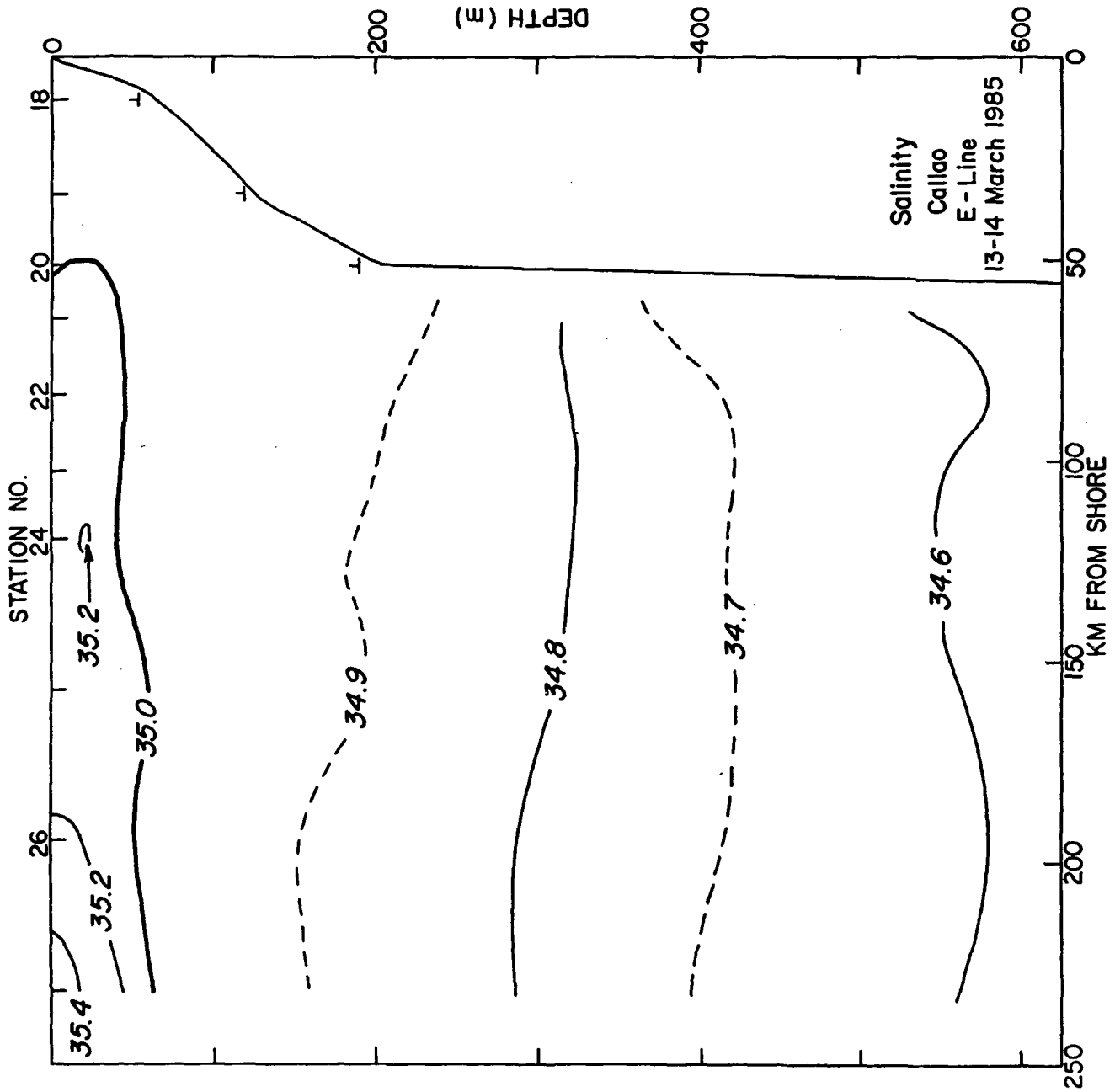

DEPTH (m)
0
200
400
600
STATION NO.
46
48
22
50
52
23
24
54
16
15
20
18
14
13
12
11
10
9
8
7
0
50
100
150
200
250
KM FROM SHORE
Temperature (°C)
Lobos de Afuera
C - Line
19-20 March 1985

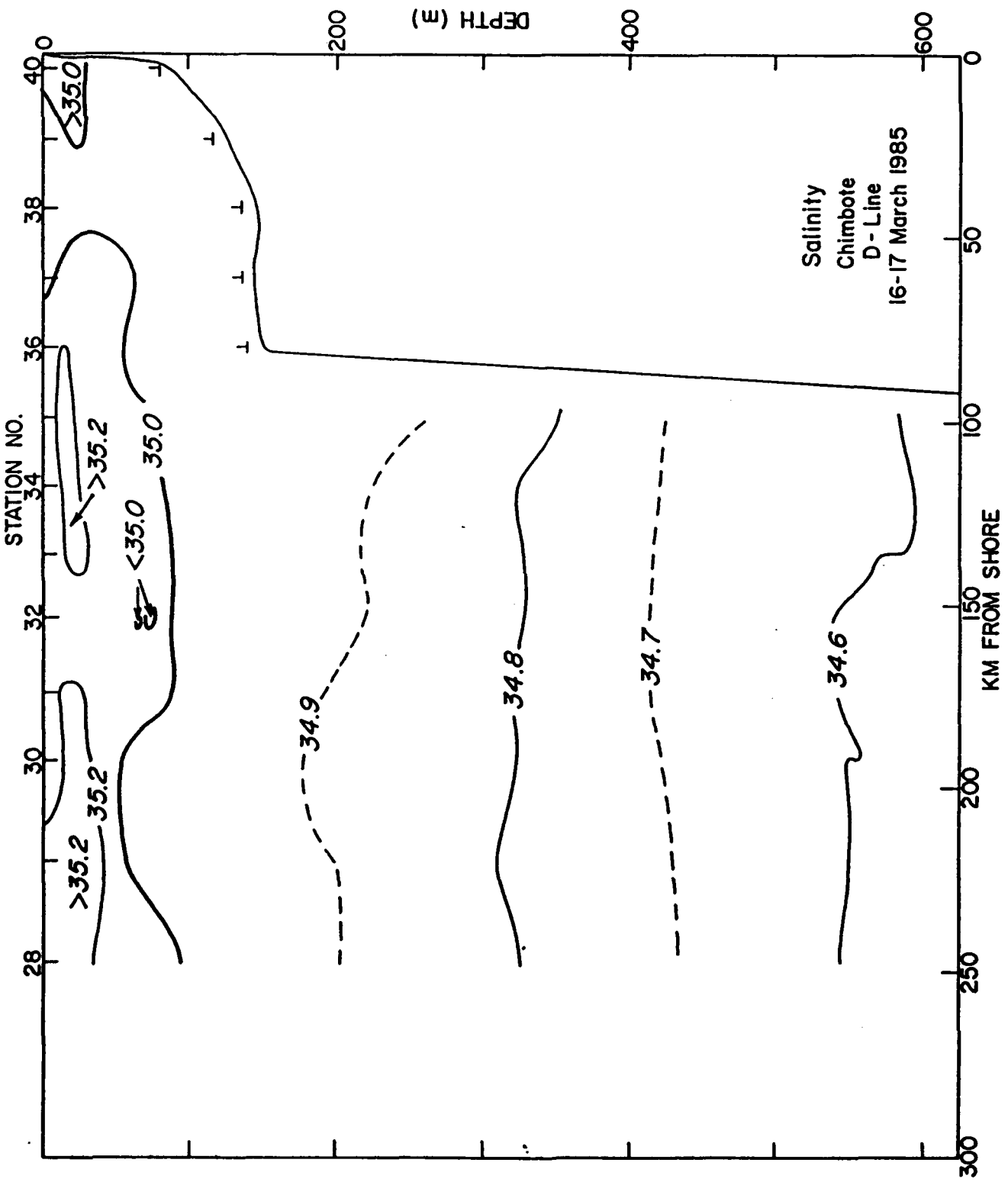

DEPTH (m)
0
200
400
600
STATION NO.
65
63
61,62
59
57
55
24
22
18
15
16
20
22
24
25
14
13
12
11
10
9
8
Temperature (°C)
(along 82°W)
M-Line
20-22 March 1985
0
200
400
600
KM FROM STATION 65

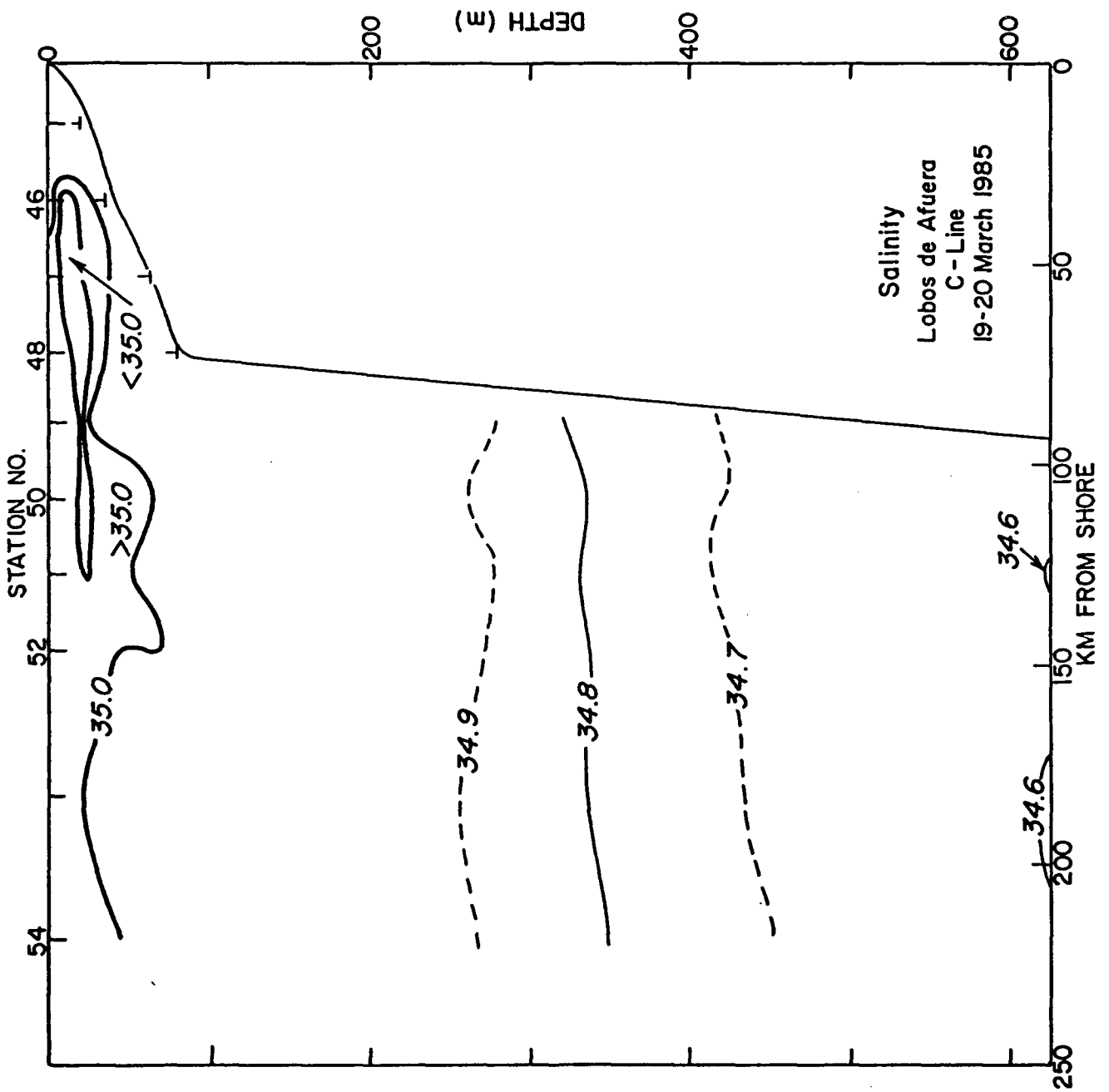

Temperature (°C)
(along 5°S)
B-Line
22-25 March 1985
DEPTH (m)
0
200
400
600
STATION NO.
68
70
22
72
23
74
76
78
24
80
25
26
27
82
KM FROM SHORE
0
100
200
300
400
16
20
14
13
12
11
10
9
8
7
15

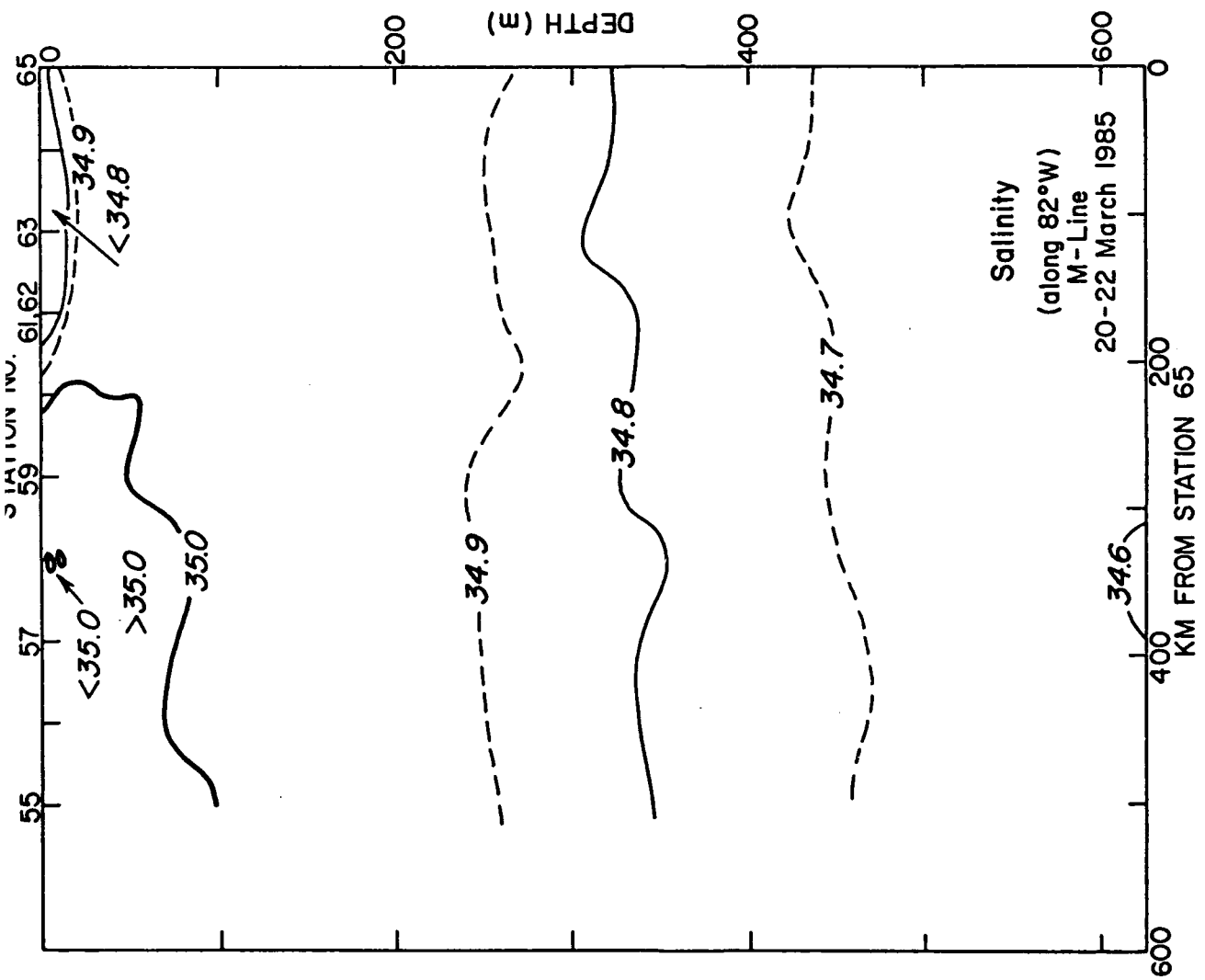

10°30'S
STATION NO.
0°00
4°30'N
85
90
95
100
105
110
>27
27
26
>29
29
28
25
24
20
18
17
16
15
14
13
12
11
10
9
8
7
0
200
400
600
DEPTH (m)
178
1600
1200
800
400
0
KM FROM STATION 113
Temperature (°C)
(along 85°W)
A-Line
26-30 March 1985

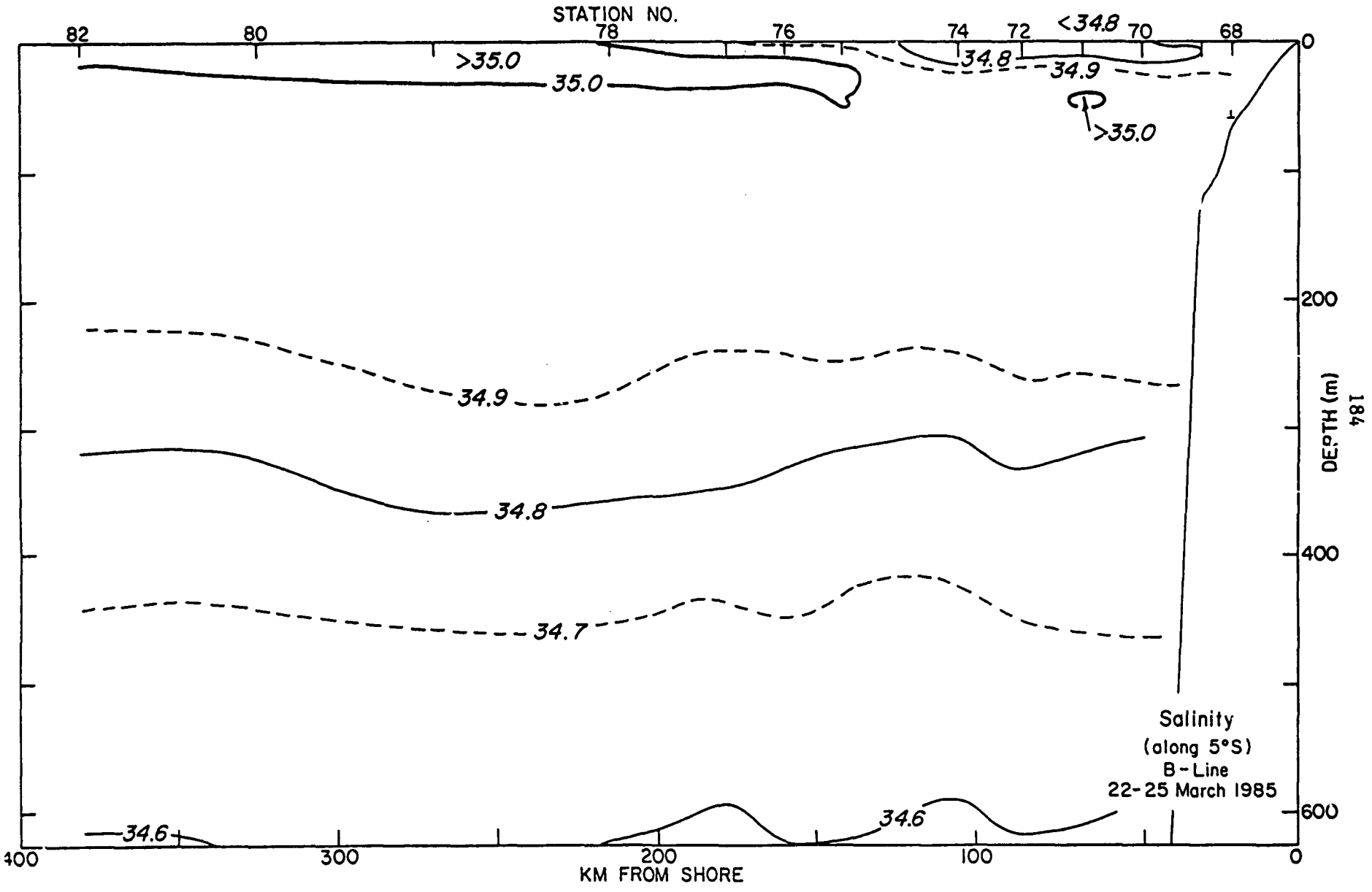

Salinity
Callao
E-Line
10 March 1985
STATION NO.
DEPTH (m)
KM FROM SHORE
35.1
35.0
34.9
34.8
34.7
34.6
Salinity
San Juan
N-Line
11-12 March 1985
STATION NO.
DEPTH (m)
KM FROM SHORE
<35.2
35.2
<35.0
>35.0
35.0
<34.8
34.9
34.8
34.7
34.6

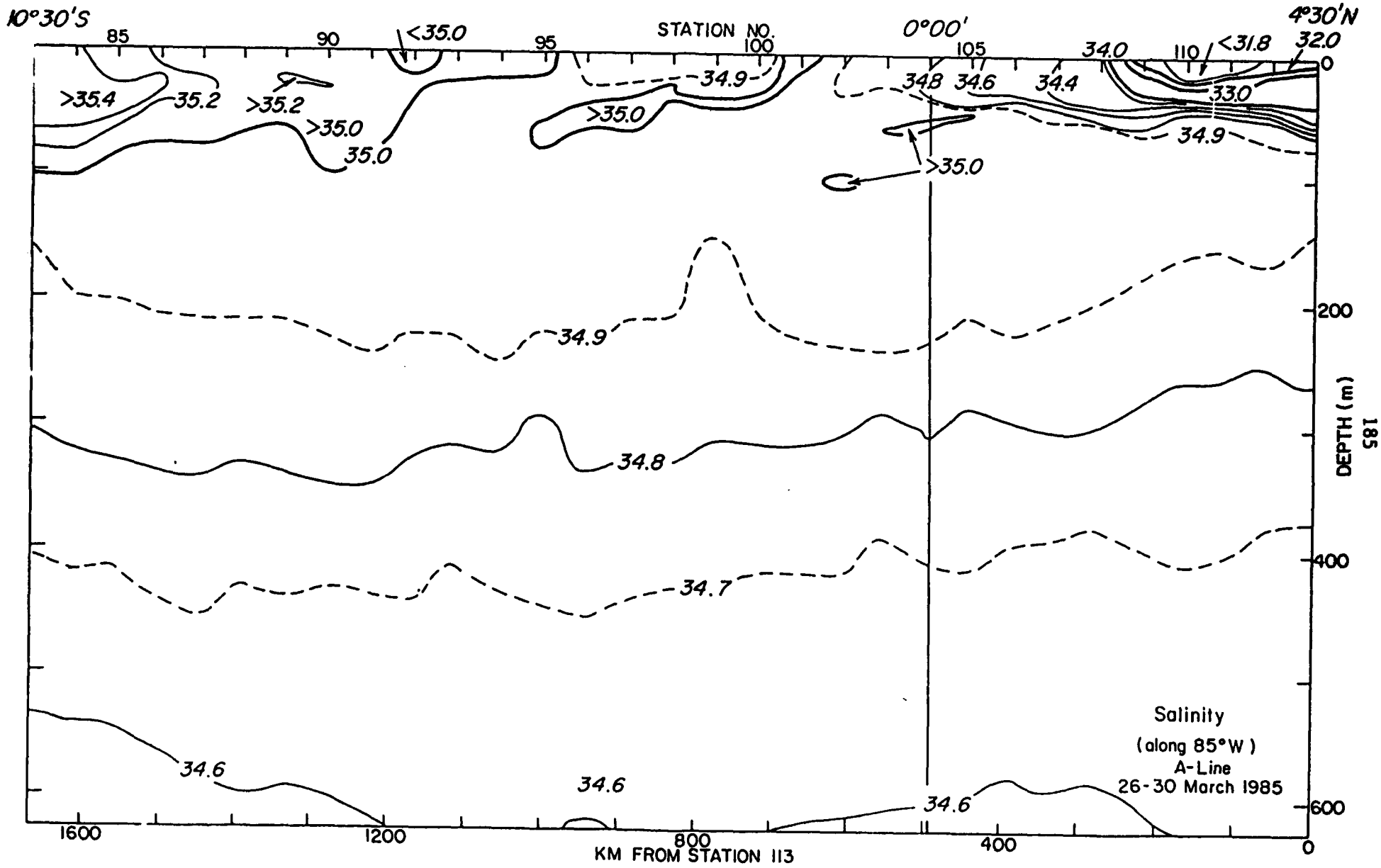

Salinity
Callao
E-Line
13-14 March 1985
DEPTH (m)
0
200
400
600
STATION NO.
18
20
22
24
26
0
50
100
150
200
250
KM FROM SHORE
35.4
35.2
35.2
35.0
34.9
34.8
34.7
34.6

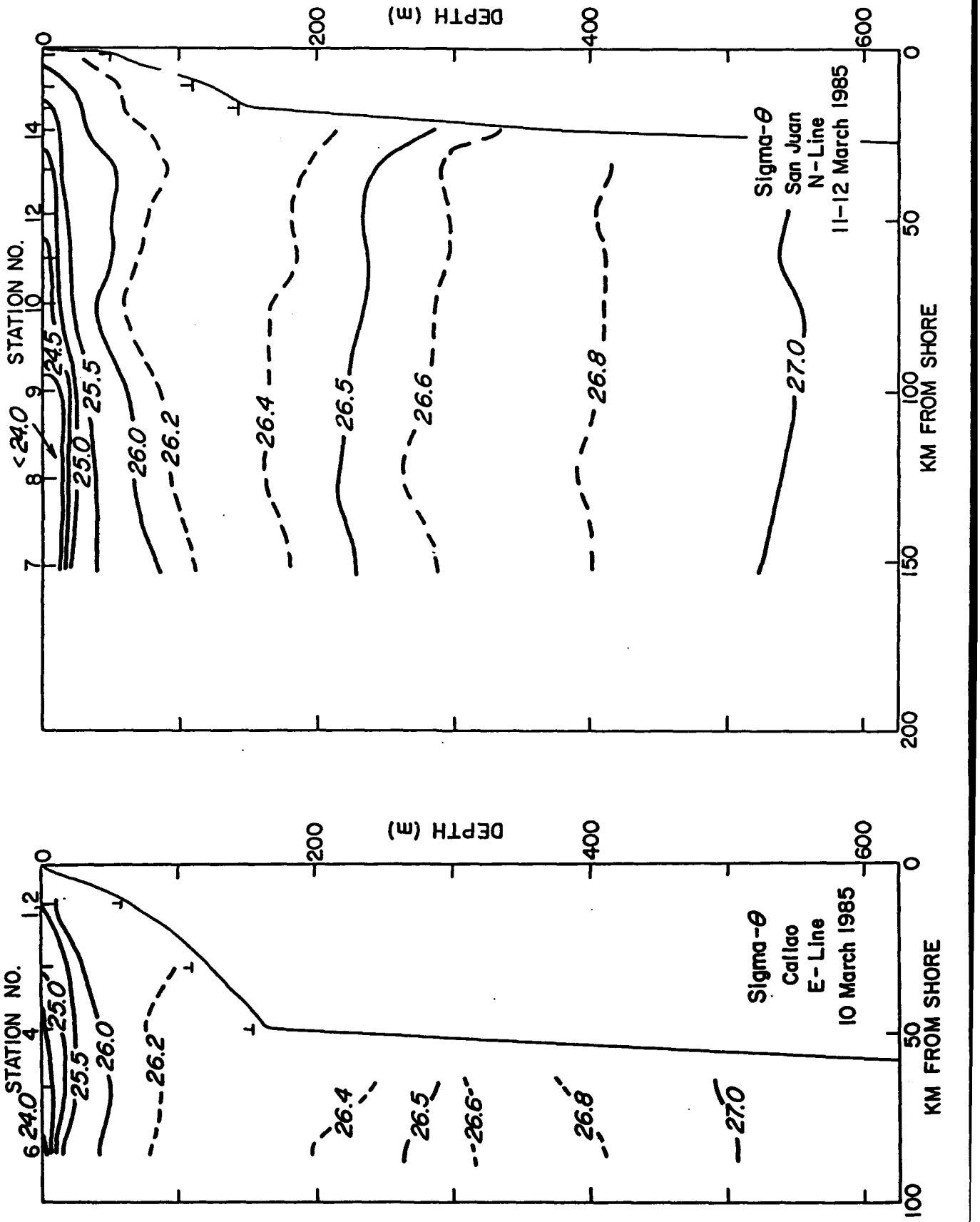

Salinity
Chimbote
D- Line
16-17 March 1985
DEPTH (m)
0
200
400
600
STATION NO.
40
38
36
34
32
30
28
KM FROM SHORE
0
50
100
150
200
250
300
>35.0
>35.2
35.0
<35.0
>35.2
35.2
34.9
34.8
34.7
34.6

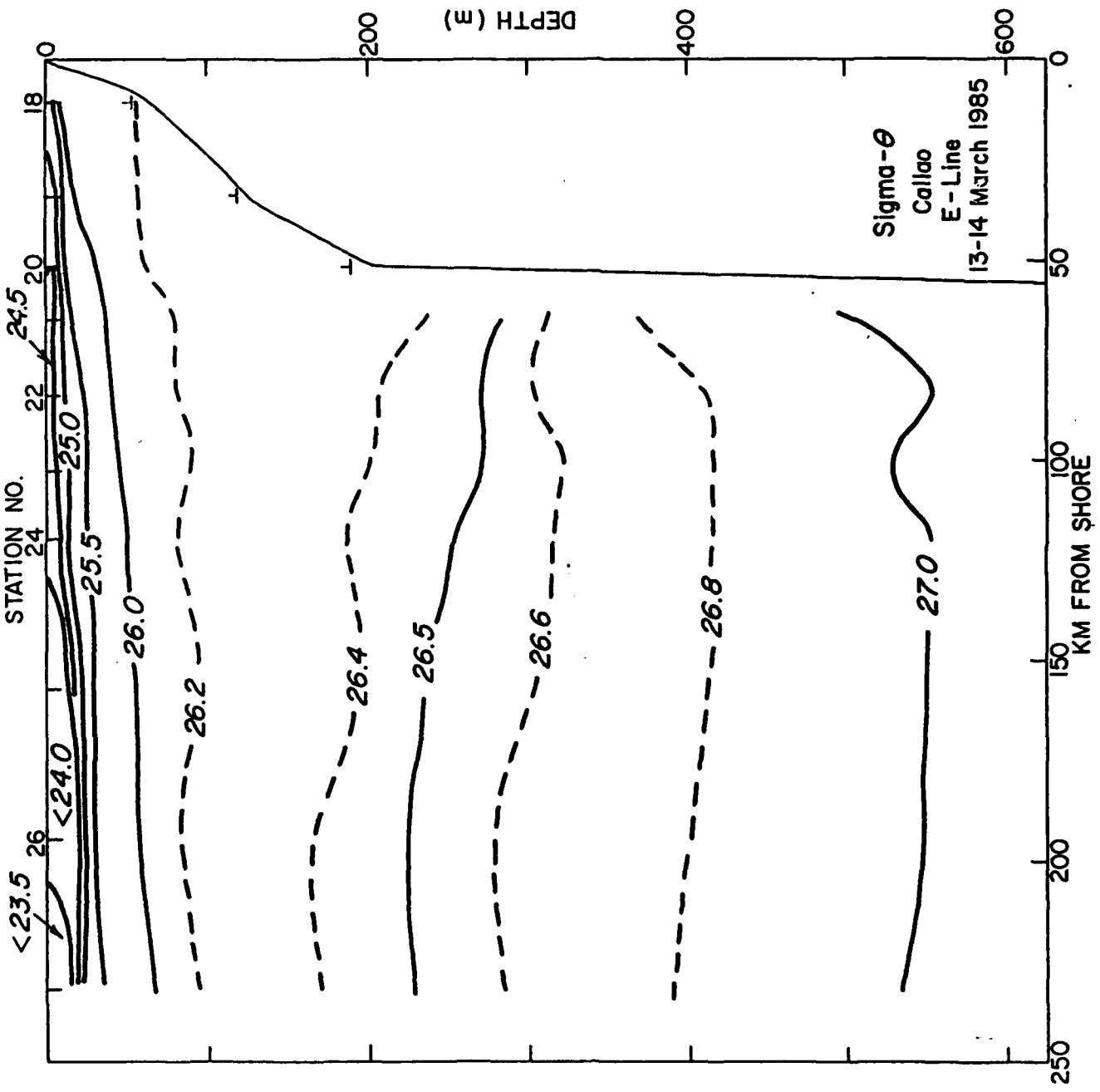

Salinity
Lobos de Afuera
C-Line
19-20 March 1985
DEPTH (m)
0
200
400
600
STATION NO.
46
48
50
52
54
KM FROM SHORE
0
50
100
150
200
250
<35.0
>35.0
35.0
34.9
34.8
34.7
34.6
34.6

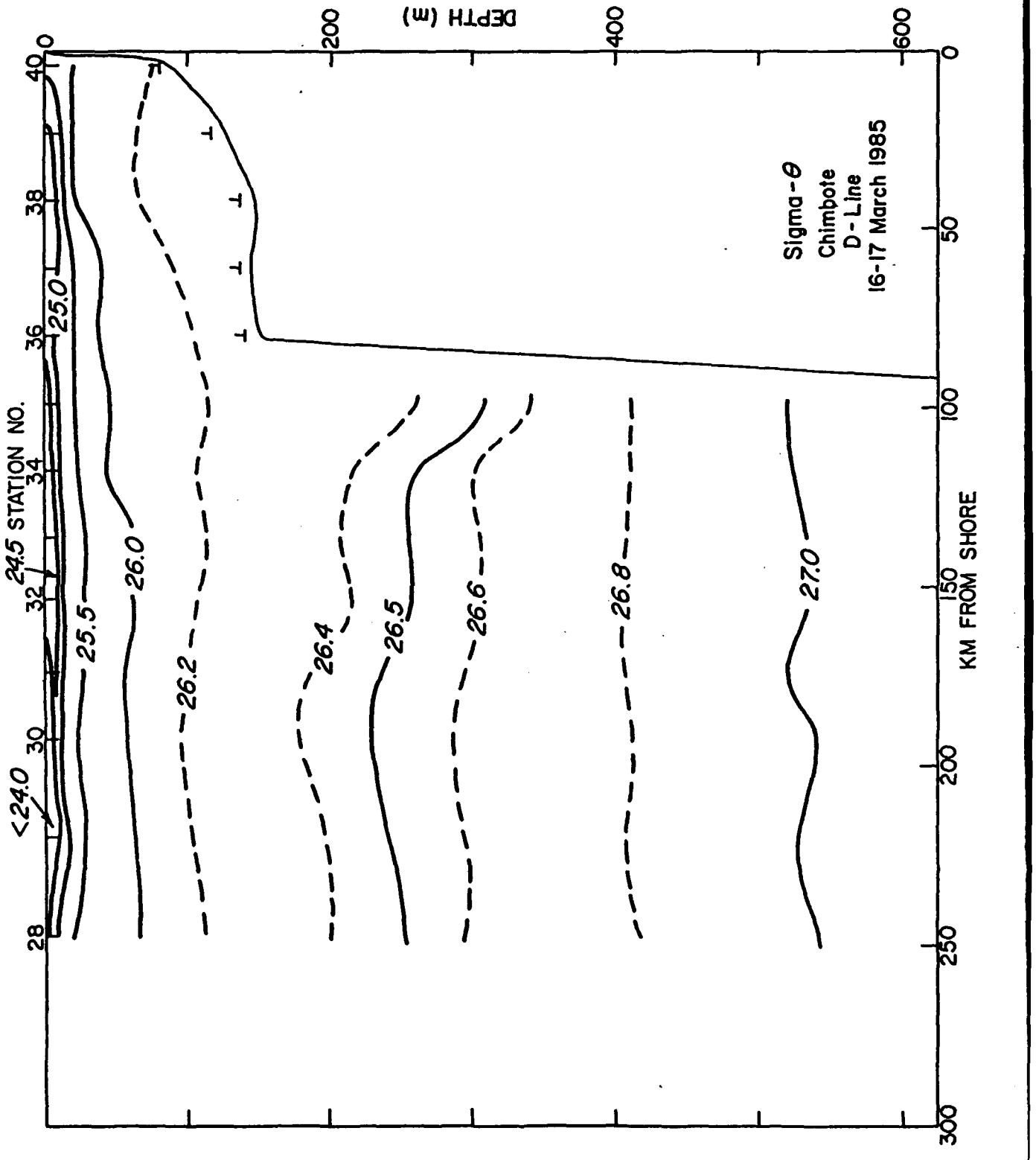

DEPTH (m)
0
200
400
600
65
63
61
59
57
55
STATION NO.
0
200
400
600
KM FROM STATION 65
Salinity
(along 82°W)
M-Line
20-22 March 1985
34.9
<34.8
<35.0
>35.0
35.0
34.9
34.8
34.7
34.6

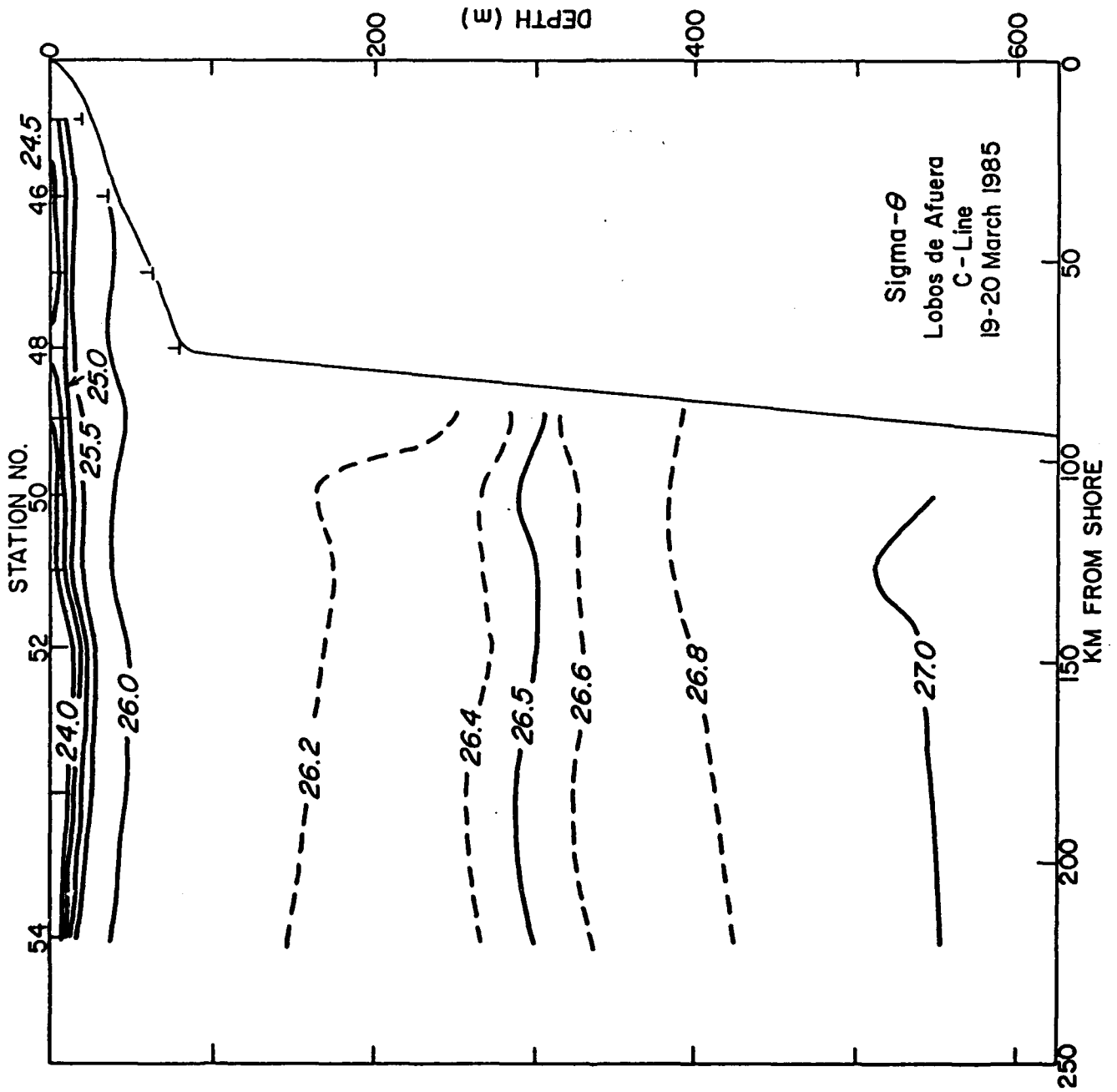

STATION NO.
82
80
78
76
74
72
70
68
<34.8
>35.0
35.0
34.8
34.9
>35.0
34.9
34.8
34.7
34.6
34.6
0
200
400
600
DEPTH (m)
184
400
300
200
100
0
KM FROM SHORE
Salinity
(along 5°S)
B-Line
22-25 March 1985

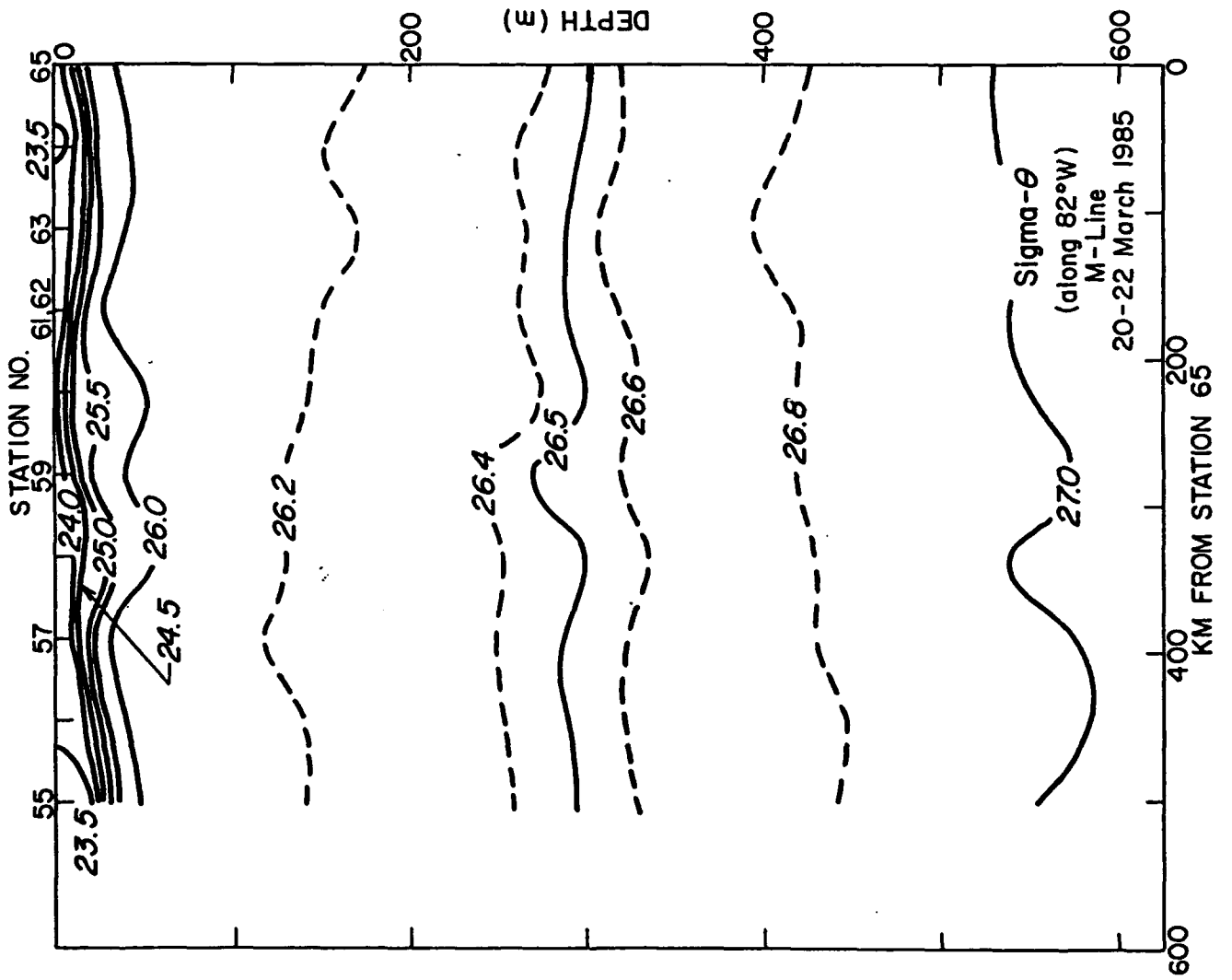

10°30'S
4°30'N
0°00'
STATION NO.
85
90
95
100
105
110
<35.0
34.0
<31.8
32.0
>35.4
35.2
>35.2
>35.0
35.0
34.9
>35.0
34.8
34.6
34.4
33.0
34.9
>35.0
34.9
34.8
34.7
34.6
34.6
34.6
0
200
400
600
DEPTH (m)
185
1600
1200
800
400
0
KM FROM STATION 113
Salinity
(along 85°W)
A-Line
26-30 March 1985

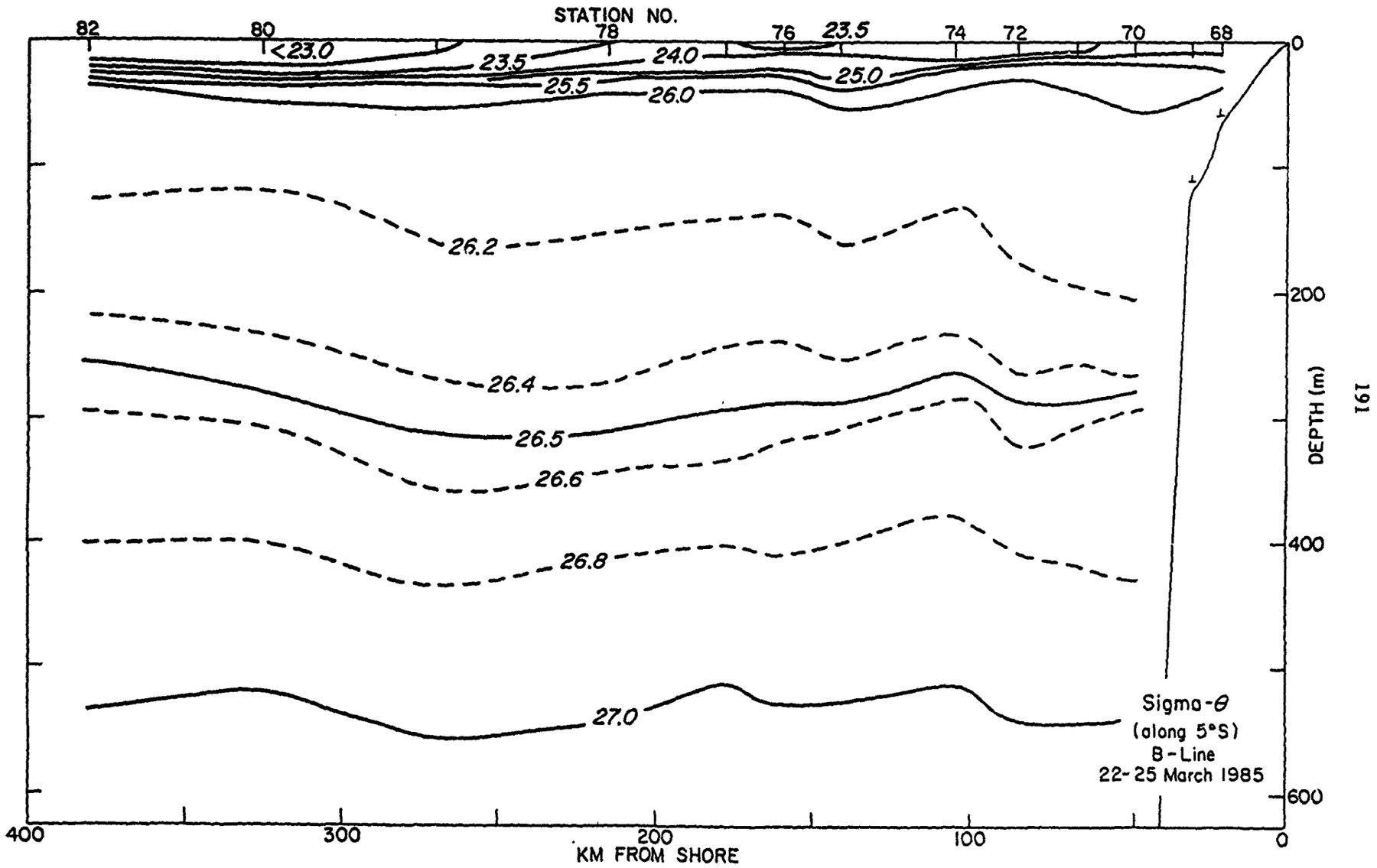

Sigma-θ
San Juan
N-Line
11-12 March 1985
STATION NO.
DEPTH (m)
KM FROM SHORE
Sigma-θ
Callao
E-Line
10 March 1985
STATION NO.
DEPTH (m)
KM FROM SHORE

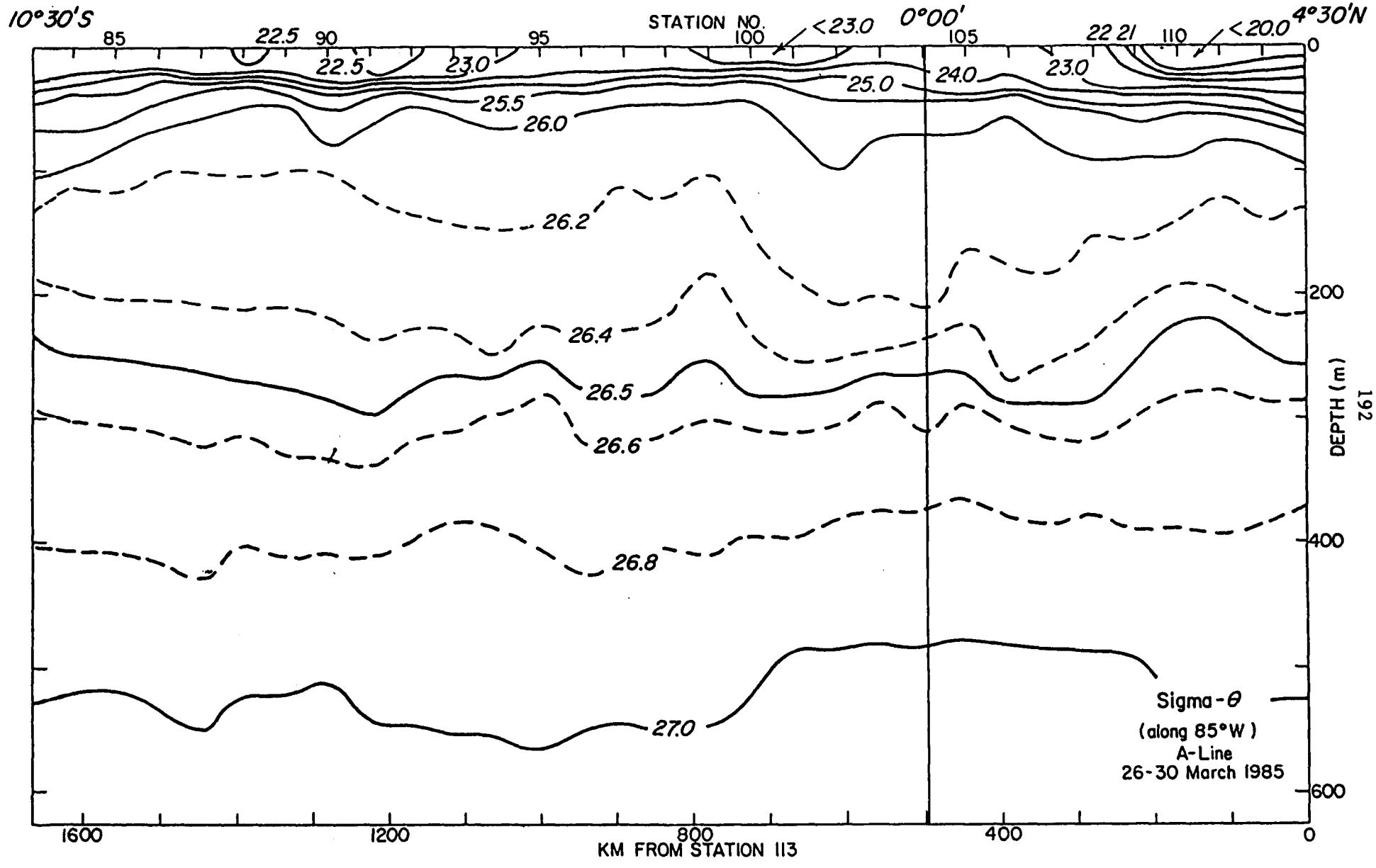

Sigma-θ
Callao
E-Line
13-14 March 1985
DEPTH (m)
0
200
400
600
STATION NO.
18
20
22
24
26
KM FROM SHORE
0
50
100
150
200
250
<23.5
<24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0


DEPTH (m)
0
200
400
600
Sigma-θ
Chimbote
D-Line
16-17 March 1985
STATION NO.
40
38
36
34
32
30
28
<24.0
24.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
0
50
100
150
200
250
300
KM FROM SHORE


DEPTH (m)
0
200
400
600
STATION NO.
46
48
50
52
54
24.5
25.0
25.5
24.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0
Sigma-θ
Lobos de Afuera
C-Line
19-20 March 1985
0
50
100
150
200
250
KM FROM SHORE


DEPTH (m)
0
200
400
600
STATION NO.
65
63
61,62
59
57
55
KM FROM STATION 65
0
200
400
600
Sigma-θ
(along 82°W)
M-Line
20-22 March 1985
23.5
24.0
25.0
25.5
26.0
24.5
23.5
26.2
26.4
26.5
26.6
26.8
27.0


STATION NO.
82
80
78
76
74
72
70
68
<23.0
23.5
24.0
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
0
200
400
600
DEPTH (m)
400
300
200
100
0
KM FROM SHORE
Sigma-θ
(along 5°S)
B-Line
22-25 March 1985


10°30'S
0°00'
4°30'N
STATION NO.
85
90
95
100
105
110
<23.0
<20.0
22.5
23.0
24.0
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
0
200
400
600
DEPTH (m)
192
1600
1200
800
400
0
KM FROM STATION 113
Sigma-θ
(along 85°W)
A-Line
26-30 March 1985

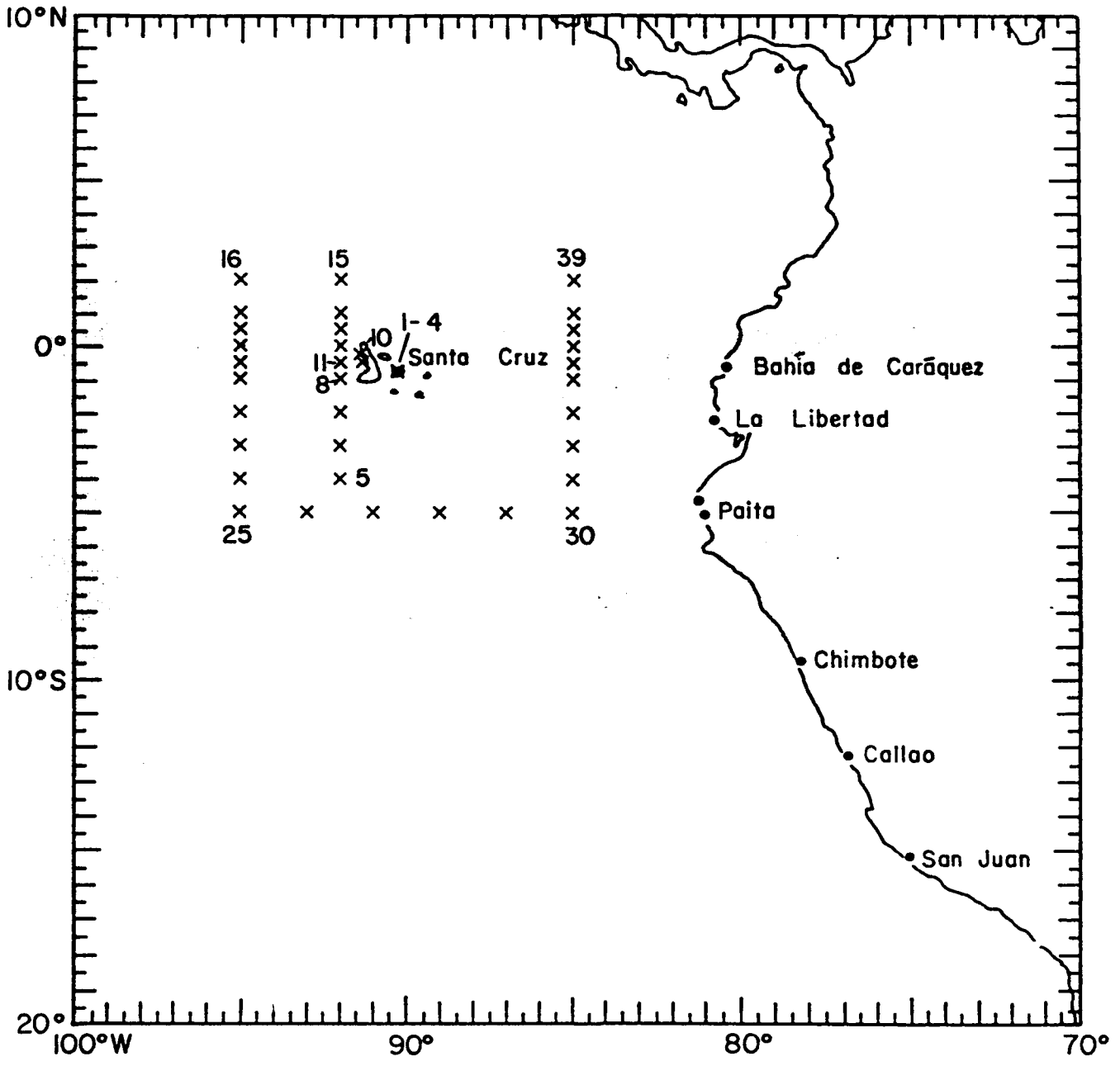
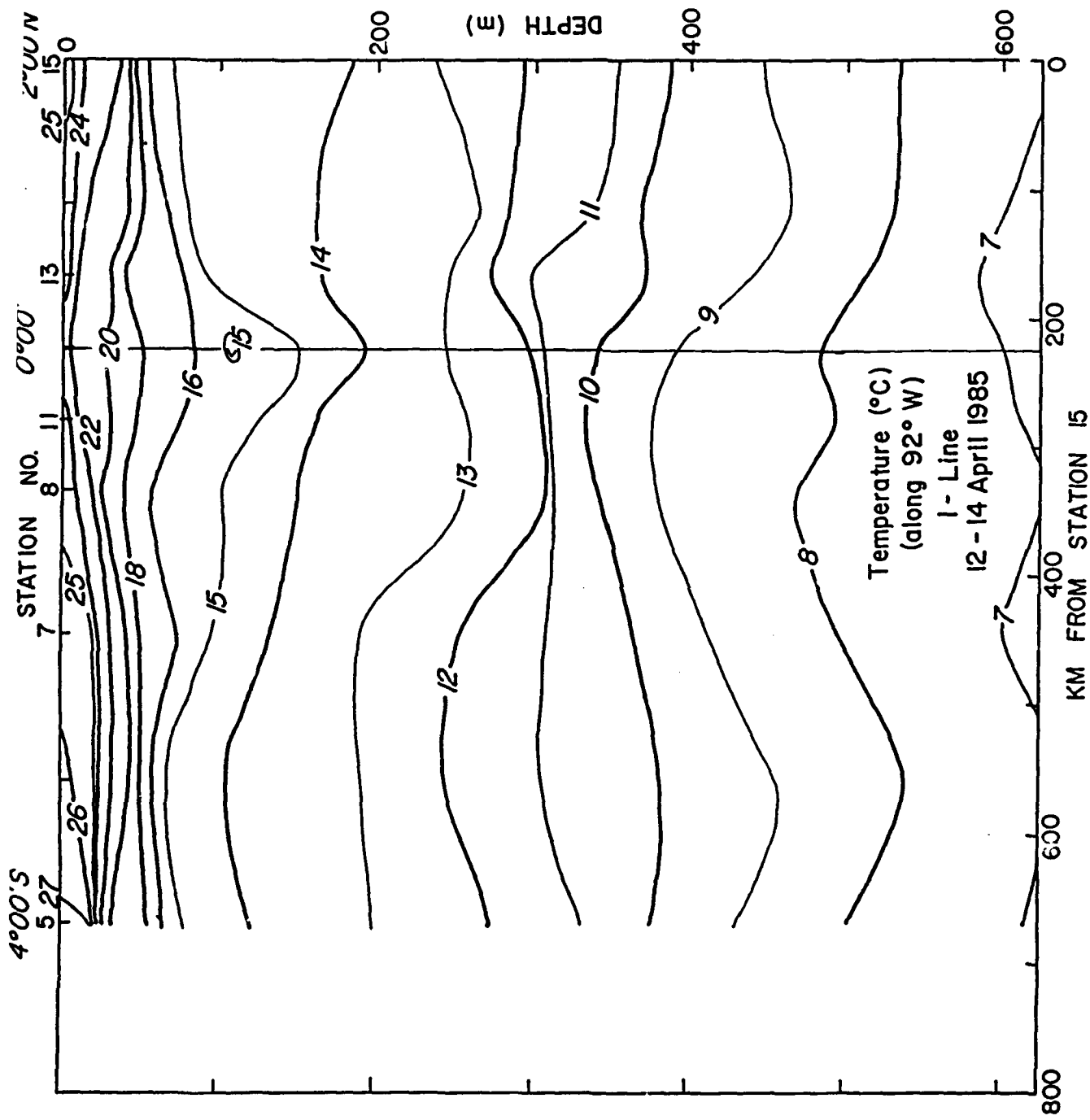
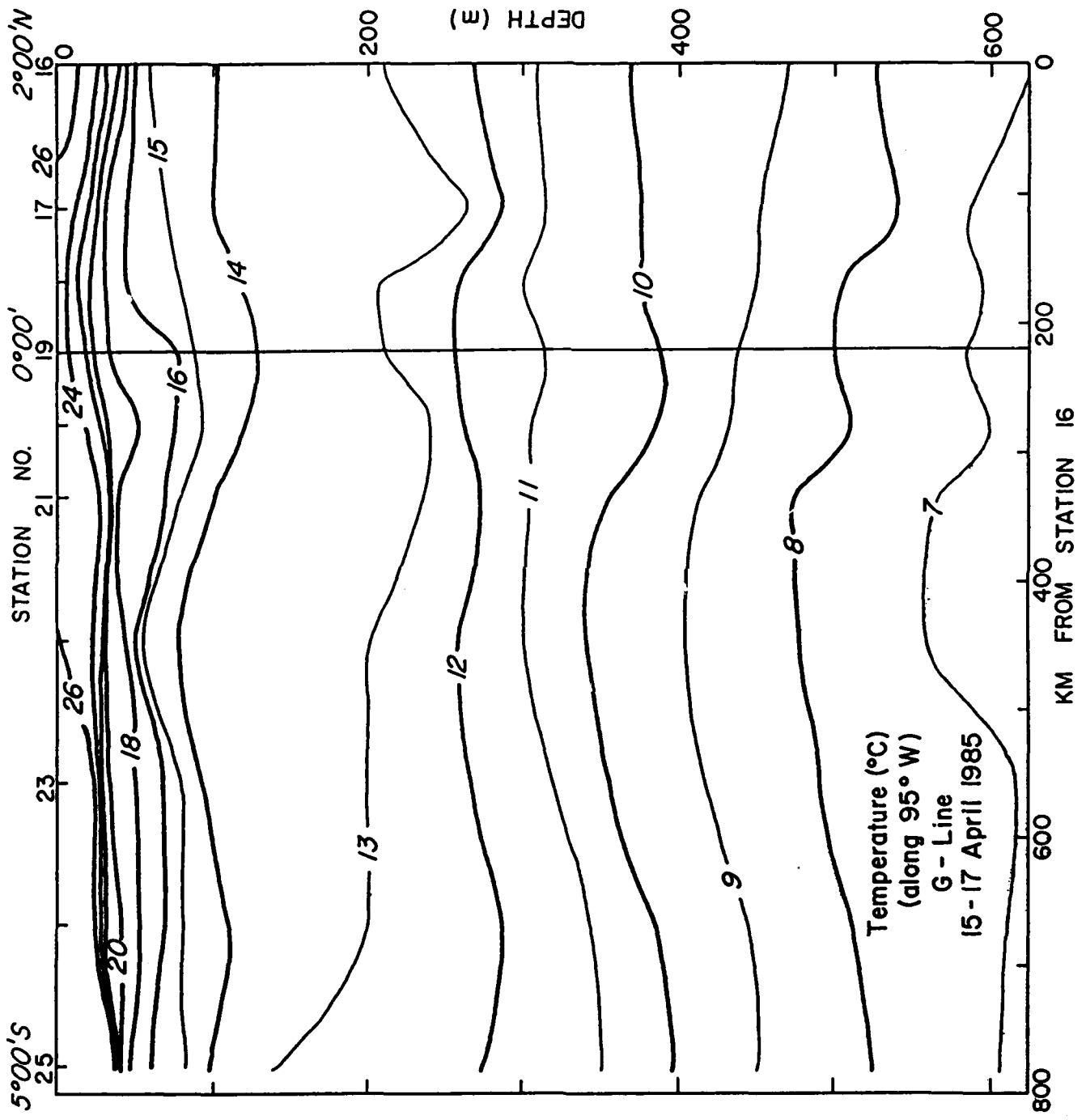


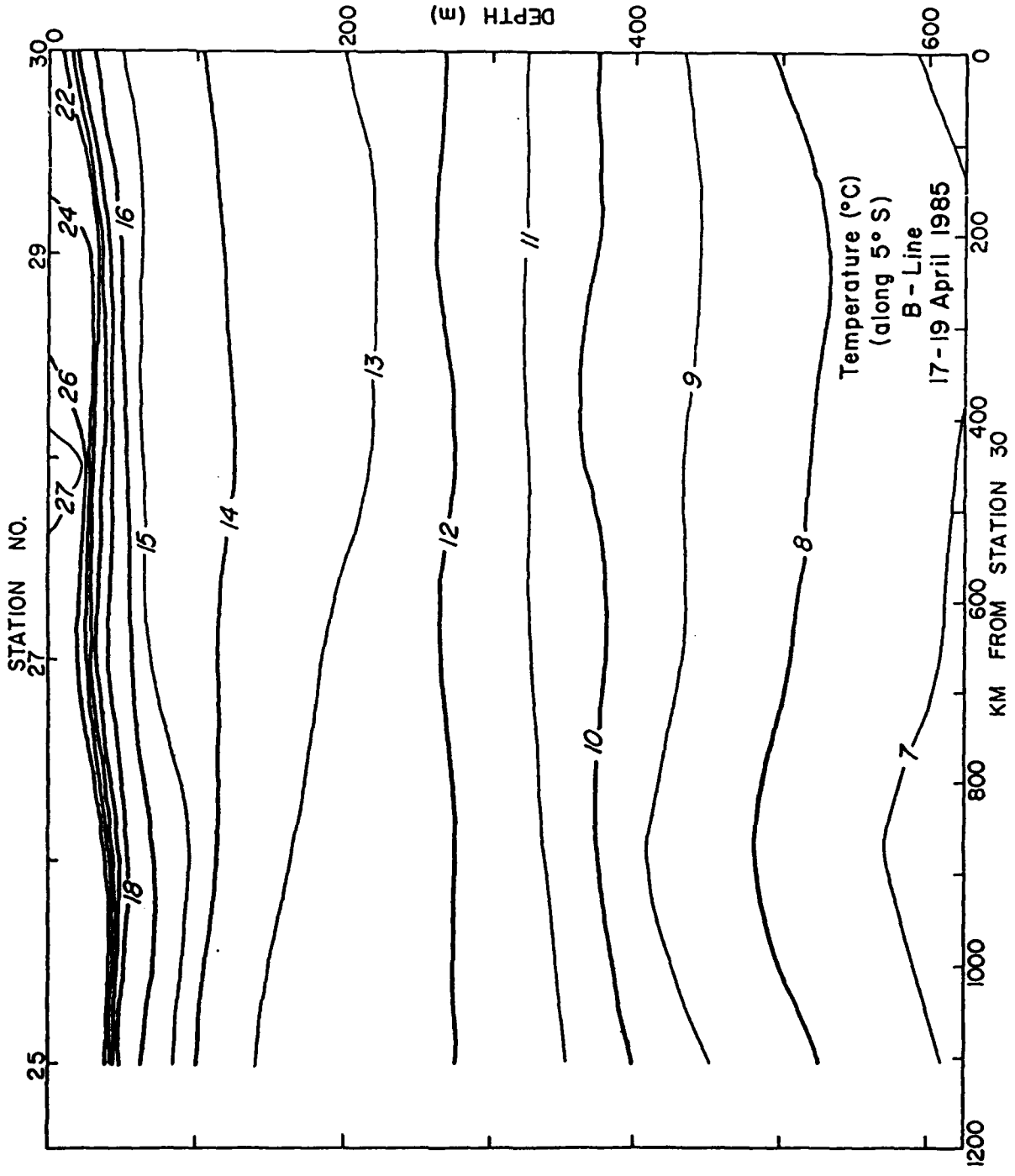
Figure 8. Location of CTD stations during WL85L3, 10-21 April 1985.

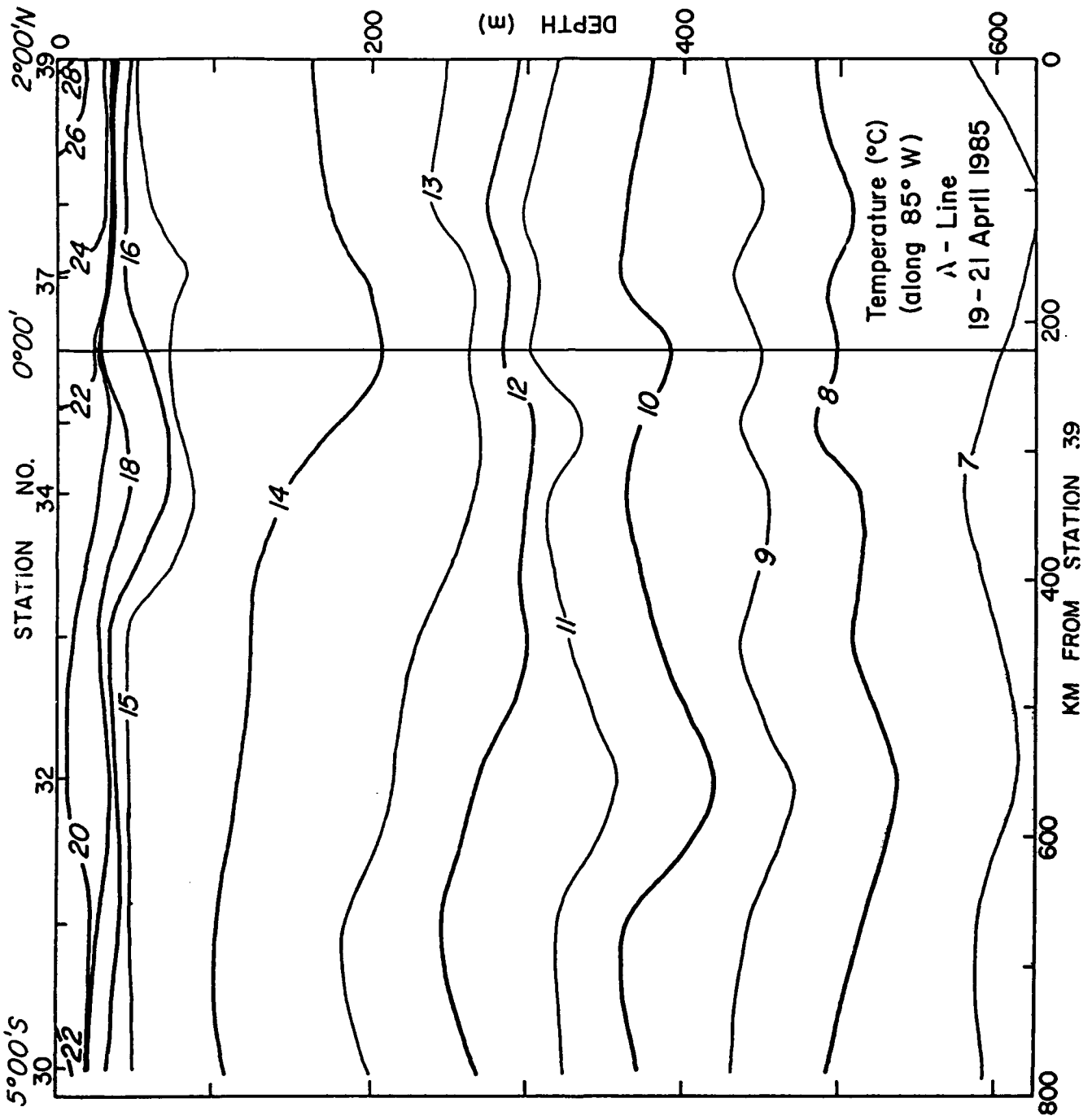
Table 9 List of stations occupied during WL85L3 showing date, time, location, wind speed and direction and atmospheric pressure.

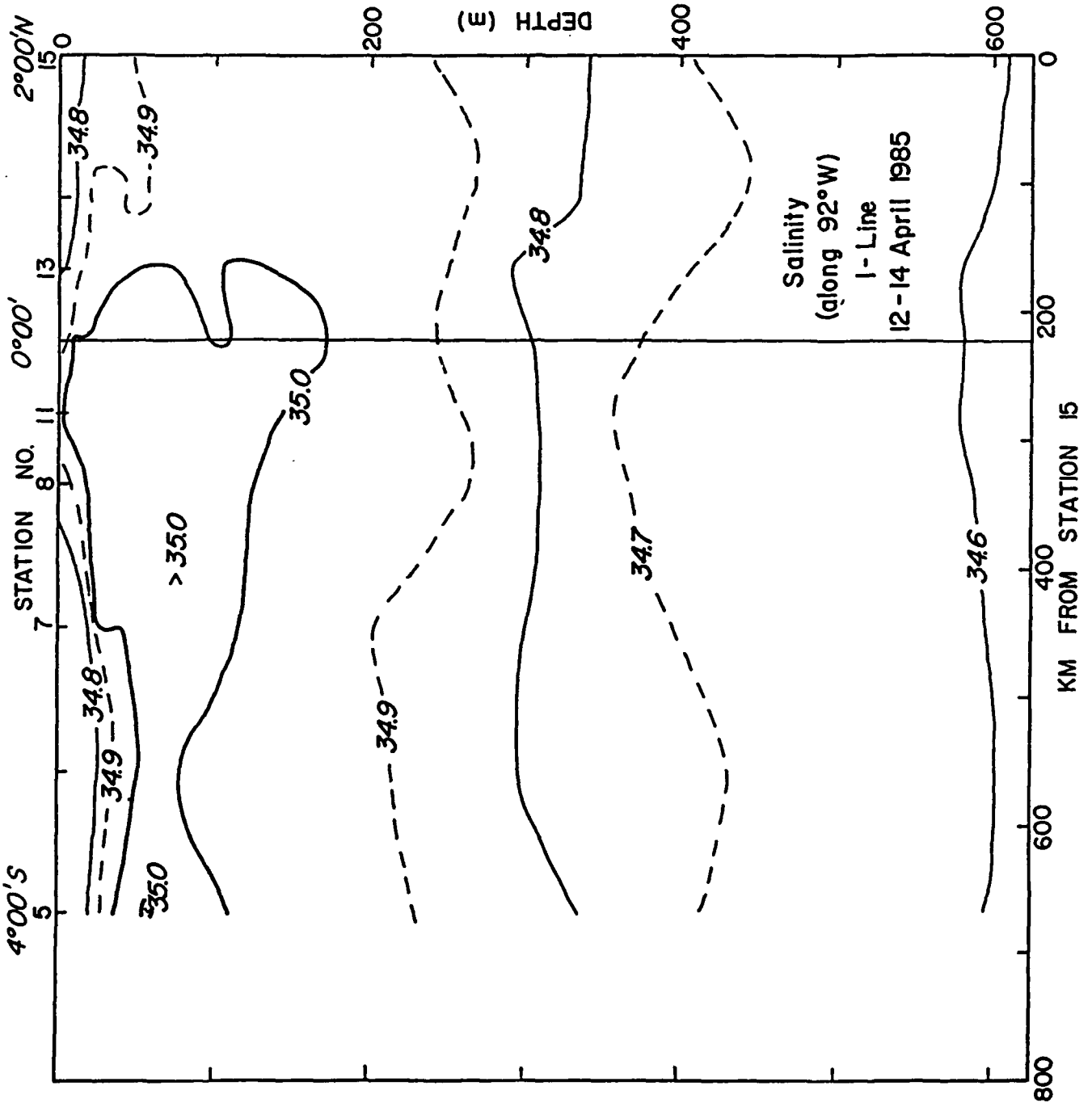
Date (1985)	Time (GMT)	Station No.	Name	Location Lat.	Long.	Wind Dir (°T)	Wind Spd (kts)	Pressure (mb)
Apr 10	1606	1		0°47.5S	90°16.8W	080	8	1012.5
11	0002	2		0 45.0S	90 17.9	070	9	1010.0
11	0601	3		0 45.0S	90 17.5	150	4	1011.2
11	1204	4		0 45.2S	90 17.7		calm	1011.4
12	1518	5		4 00.0S	92 00.0	100	12	1014.1
12	2217	6		3 00.6S	92 00.7	085	8	1010.0
13	0511	7		2 00.0S	92 00.1	100	8	1013.5
13	1143	8		1 00.0S	92 00.0	110	7	1011.3
13	1754	9		0 29.7S	91 20.2	040	5	1013.2
13	2056	10		0 15.3S	91 24.8	290	9	1010.5
14	0206	11		0 30.2S	91 57.8	310	5	1012.5
14	0616	12		0 00.1S	92 00.0	000	3	1013.2
14	1024	13		0 30.0N	92 00.0	--	calm	1011.1
14	1413	14		0 59.9N	92 00.1	--	calm	1012.5
14	2057	15		2 00.0N	92.00.1	120	4	1010.0
15	1237	16		2 00.2N	95 00.0	--	calm	1010.0
15	1911	17		1 00.1N	95 00.0	140	7	1011.0
15	2338	18		0 30.0N	95 00.0	150	4	1008.4
16	0318	19		0 00.2N	95 00.0	115	4	1010.1
16	0735	20		0 29.9S	95 00.0	--	calm	1009.8
16	1121	21		0 59.9S	95 00.0	Airs	--	1009.2
16	1801	22		2 00.0S	95 00.0	130	11	1011.3
17	0004	23		3 00.0S	95 00.0	130	12	1008.8
17	0108	23b		3 00.0S	95 00.0	--	--	--
17	0715	24		4 00.0S	95 00.0	120	11	1010.5
17	1345	25		4 59.9S	94 59.9	115	11	1011.4
18	0149	26		5 00.0S	93 00.3	120	10	1011.0
18	1257	27		5 00.1S	91 00.1	070	12	1011.3
18	2351	28		5 00.0S	89 00.0	085	12	1005.0
19	1132	29		5 00.0S	87 00.1	120	9	1012.2
19	2330	30		5 00.0S	85 00.0	130	11	1010.6
20	0546	31		4 00.2S	85 00.0	130	11	1013.2
20	1139	32		3 00.0S	85 00.0	150	09	1011.4
20	1817	33		2 00.1S	85 00.0	150	12	1012.0
21	0002	34		0 59.8S	84 59.8	150	7	1010.0
21	0353	35		0 30.0S	85 00.0	150	5	1012.2
21	0716	36		0 00.0	85 00.0	170	7	1010.5
21	1101	37		0 30.0N	85 00.0	160	8	1010.2
21	1441	38		1 00.0N	85 00.0	200	9	1012.2
21	2035	39		2 00.0N	85 00.0	180	10	1009.0

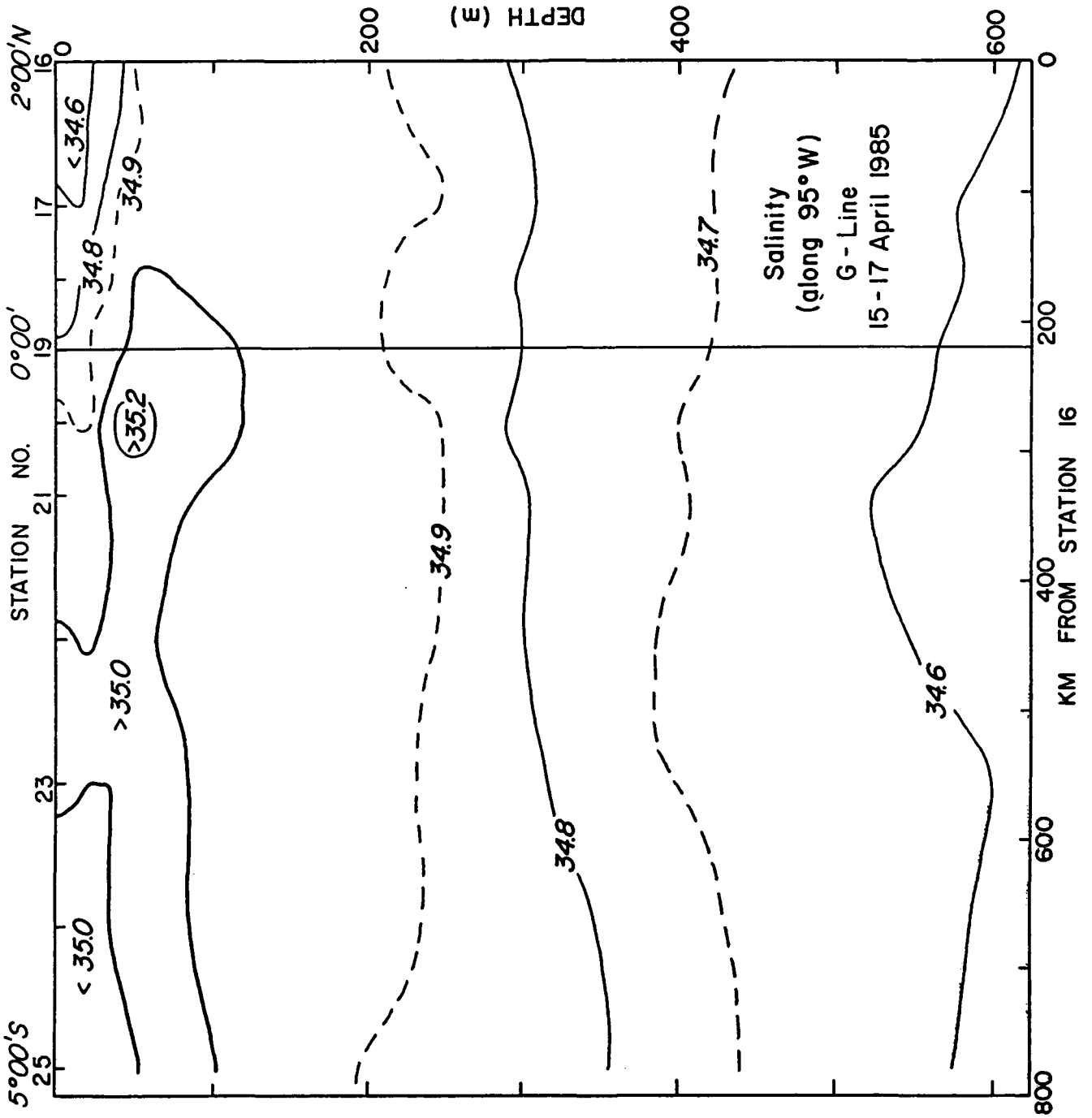

DEPTH (m)
0
200
400
600
800
KM FROM STATION 15
0
200
400
600
Temperature (°C)
(along 92° W)
I - Line
12 - 14 April 1985
STATION NO.
4°00'S
0°00'
4°00'N
5 27
7 25
8 11
13
25 24
15 0
26
22
20
18
16
15
14
13
12
11
10
9
8
7
7

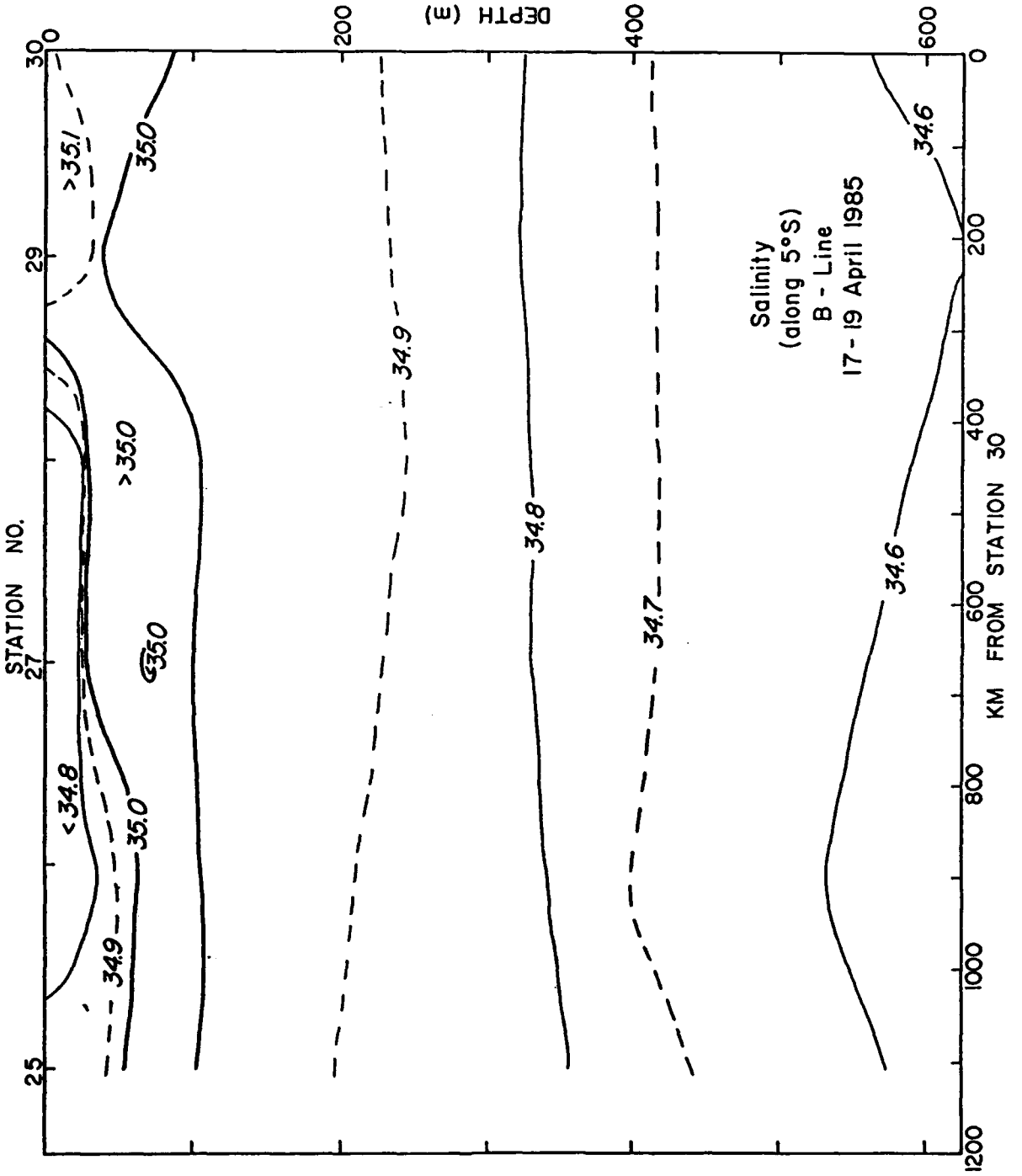

5°00'S
0°00'
2°00'N
STATION NO.
25 23 21 19 17 16
0
200
400
600
800
DEPTH (m)
0
200
400
600
KM FROM STATION 16
Temperature (°C)
(along 95° W)
G - Line
15 - 17 April 1985
26
24
20
18
16
15
14
13
12
11
10
9
8
7

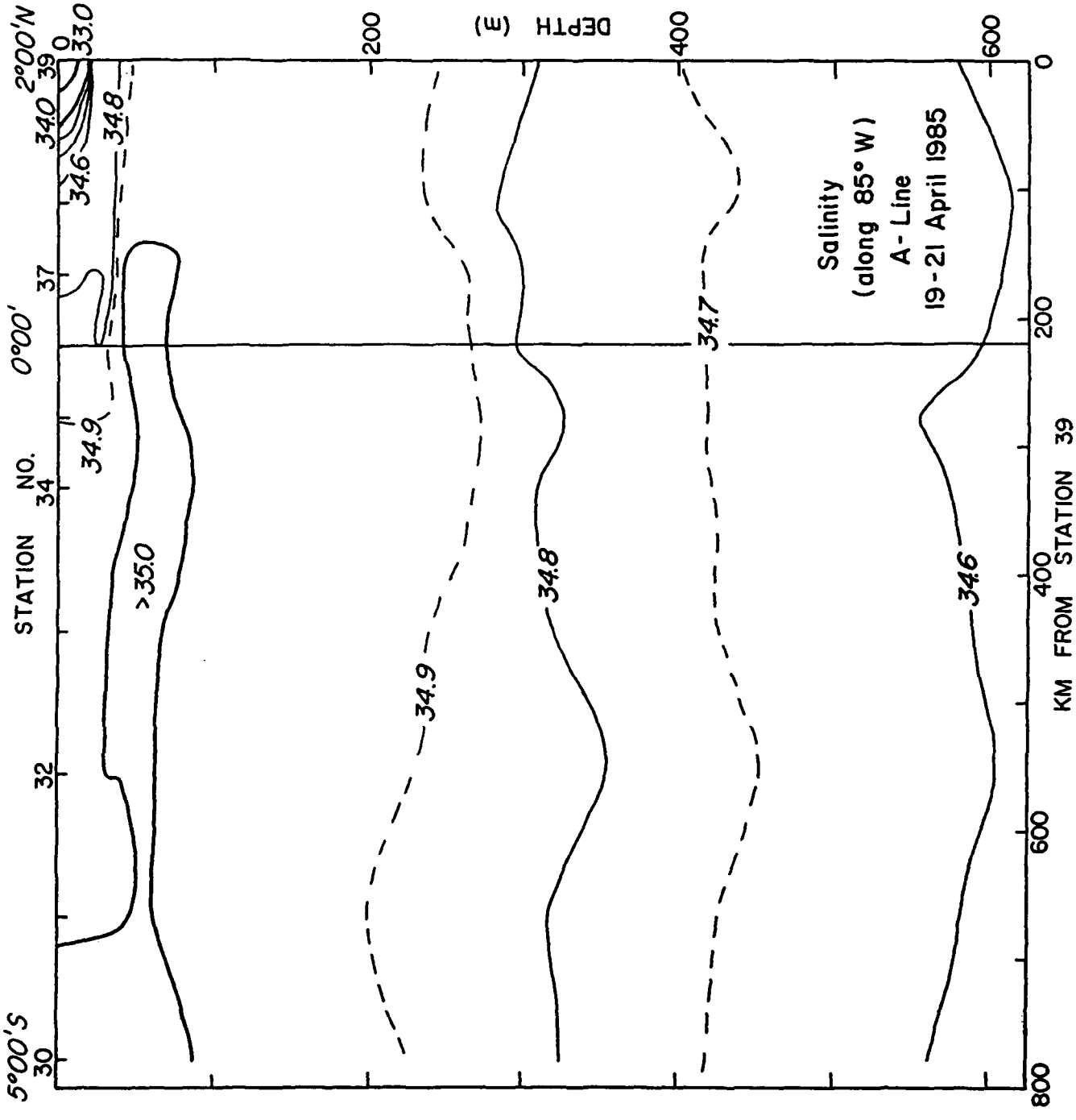

DEPTH (m)
0
200
400
600
STATION NO.
30
29
27
25
KM FROM STATION 30
0
200
400
600
800
1000
1200
Temperature (°C)
(along 5° S)
B - Line
17 - 19 April 1985
22
24
26
27
16
15
14
18
13
12
11
10
9
8
7

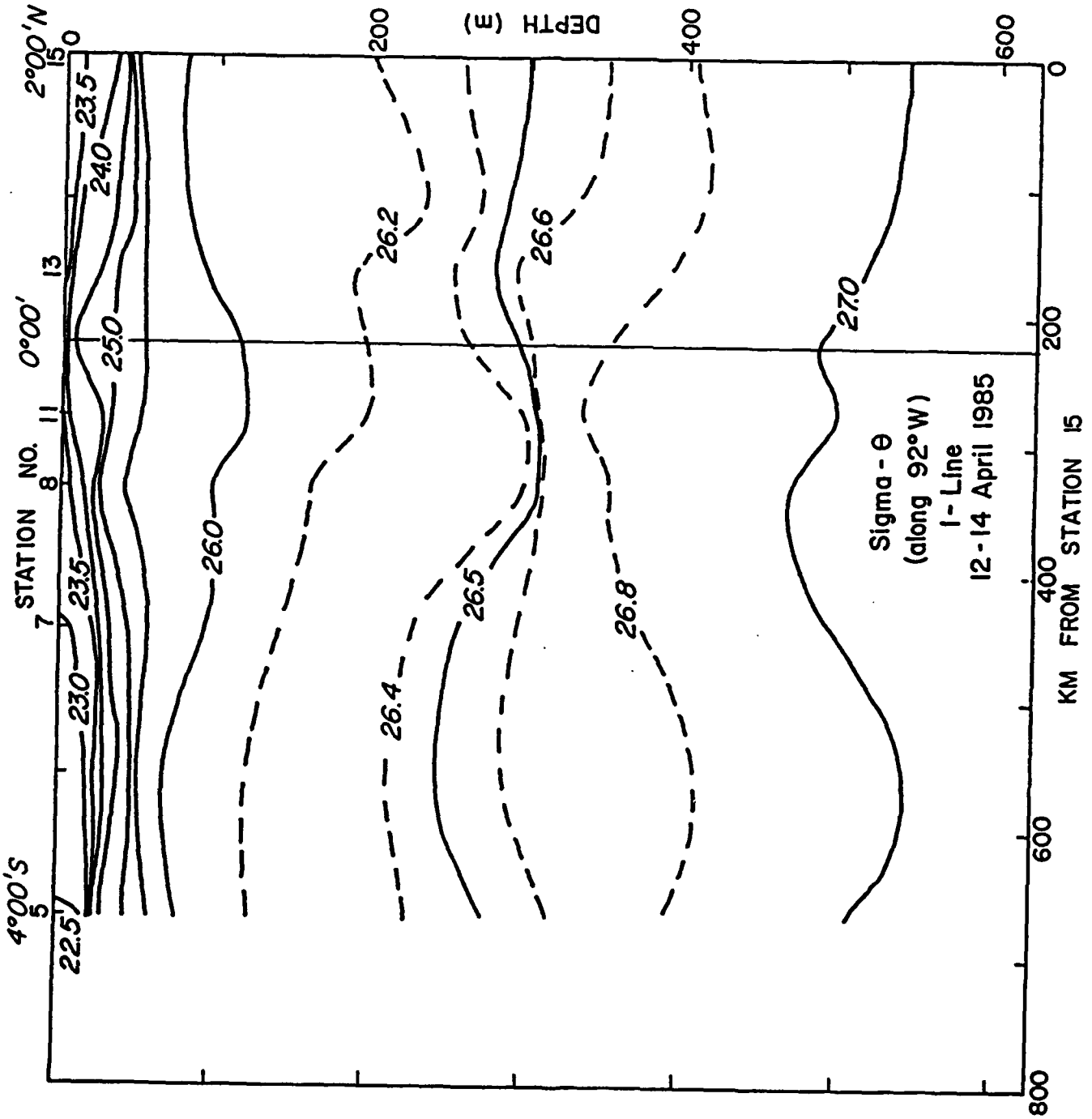

2°00'N
0°00'
5°00'S
STATION NO.
39
37
34
32
30
0
200
400
600
800
DEPTH (m)
KM FROM STATION 39
Temperature (°C)
(along 85° W)
λ - Line
19 - 21 April 1985
28
26
24
22
20
18
16
15
14
13
12
11
10
9
8
7

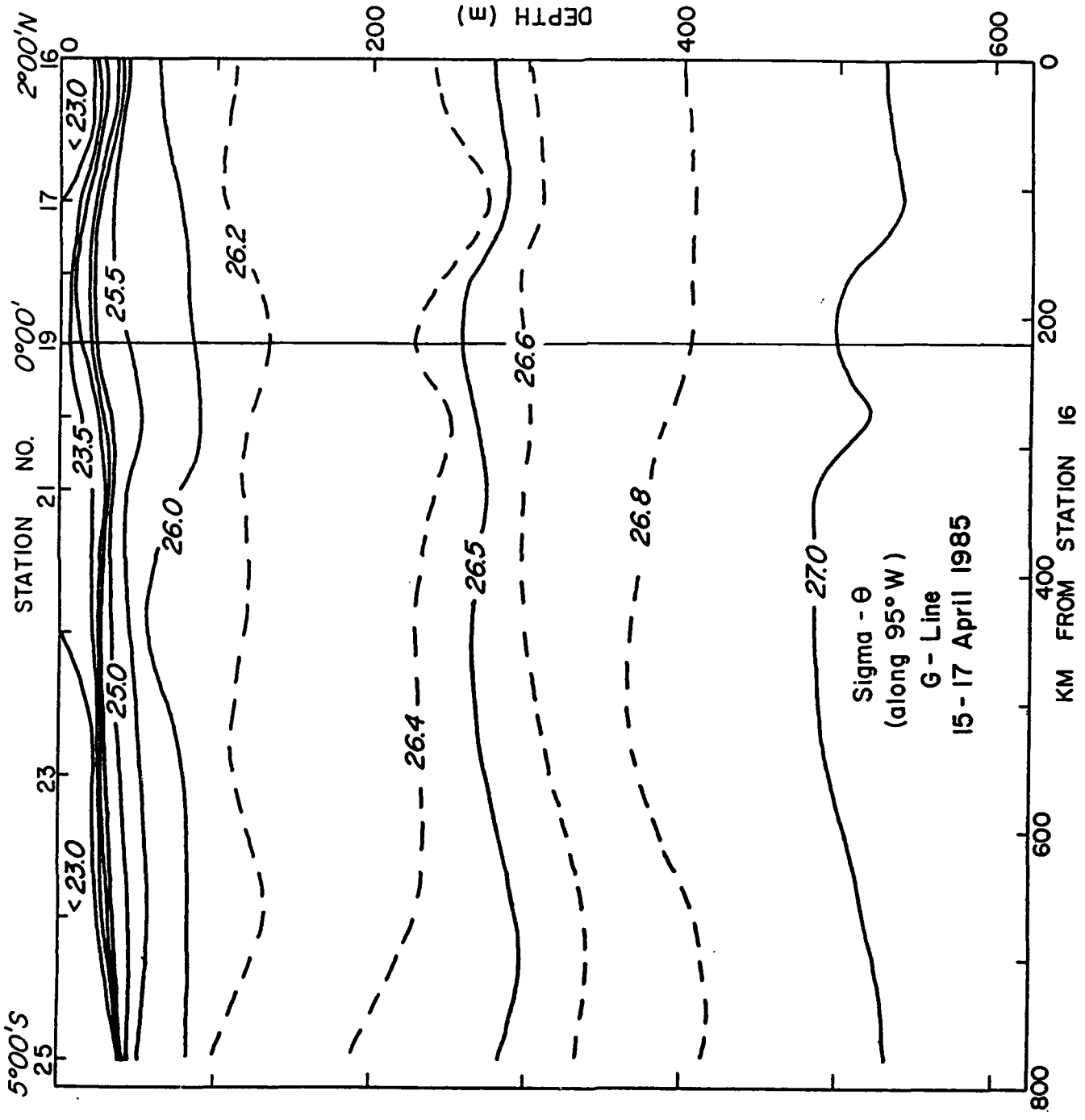

Salinity
(along 92°W)
I-Line
12-14 April 1985
DEPTH (m)
KM FROM STATION 15
STATION NO.
2°00'N
0°00'
4°00'S
34.8
34.9
35.0
>35.0
34.7
34.6

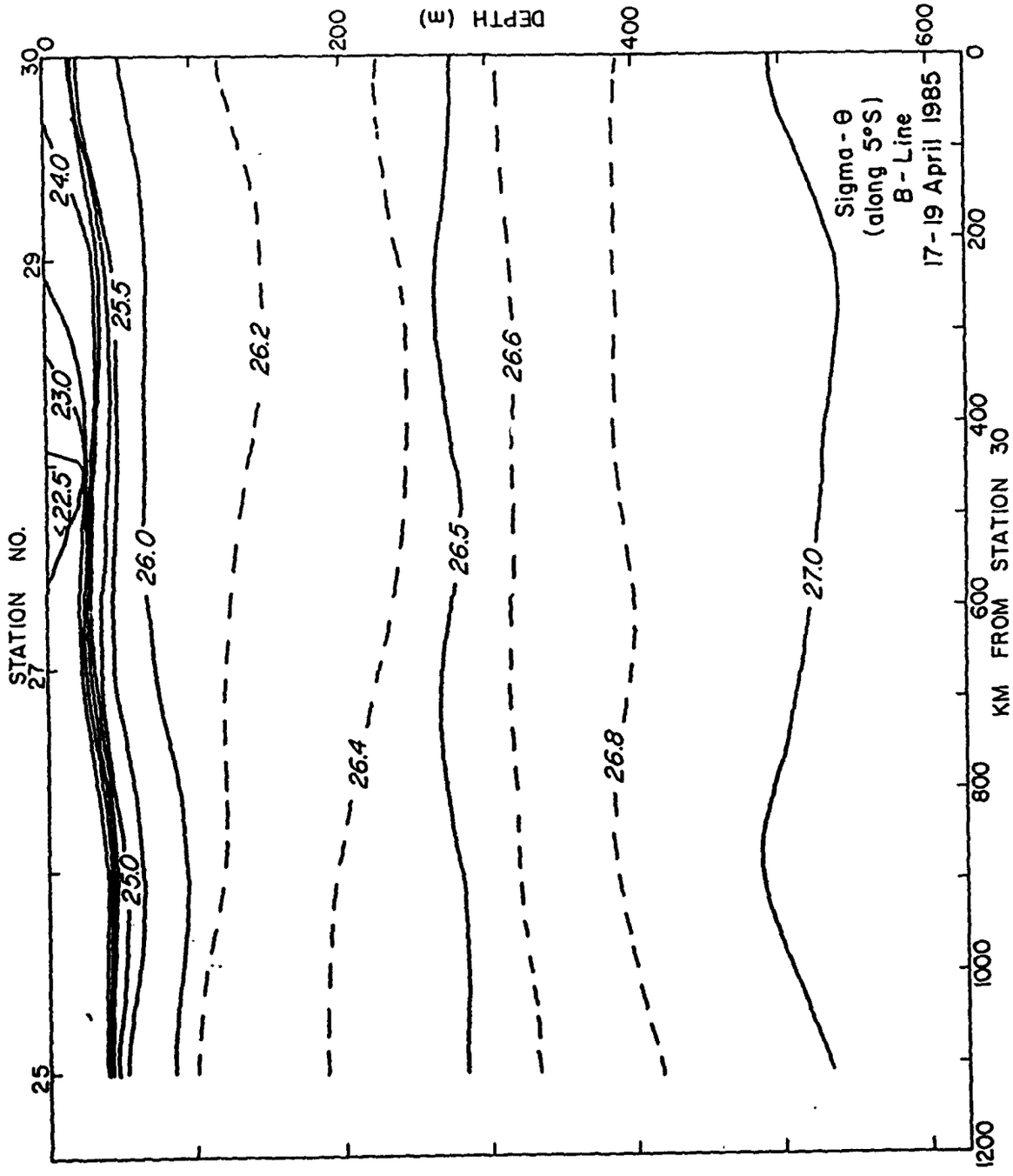

Salinity
(along 95° W)
G - Line
15 - 17 April 1985
DEPTH (m)
0
200
400
600
800
2°00'N
0°00'
5°00'S
STATION NO.
16
17
19
21
23
25
KM FROM STATION 16
0
200
400
600
800
< 34.6
34.8
34.9
34.7
>35.2
>35.0
< 35.0
34.9
34.8
34.6

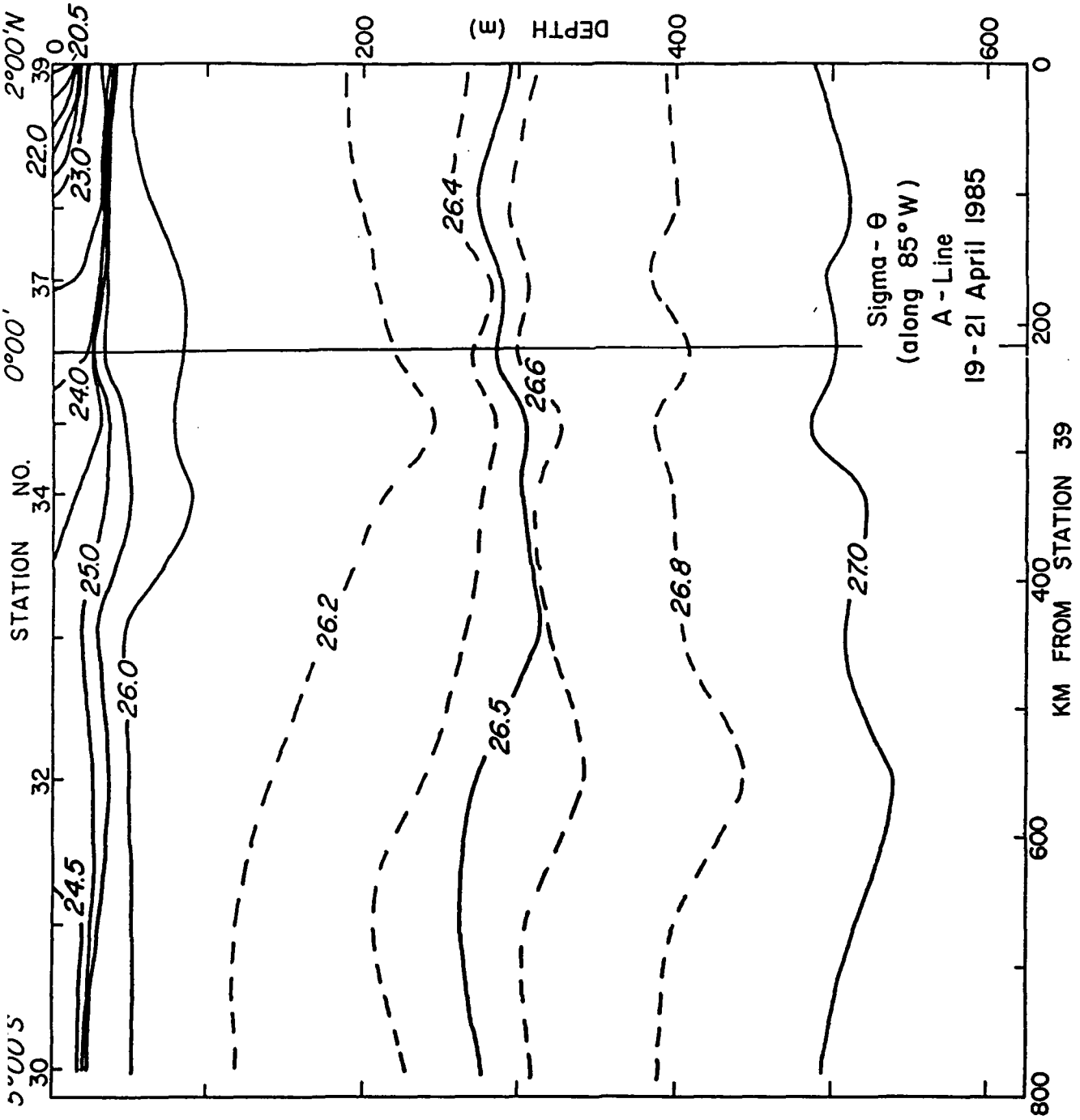

DEPTH (m)
0
200
400
600
STATION NO.
30
29
27
25
KM FROM STATION 30
0
200
400
600
800
1000
1200
Salinity
(along 5°S)
B - Line
17 - 19 April 1985
>35.1
35.0
>35.0
34.9
34.8
34.7
34.6
<34.8
35.0
34.9
35.0
34.8
34.6


Salinity
(along 85° W)
A-Line
19-21 April 1985
DEPTH (m)
STATION NO.
KM FROM STATION 39
2°00'N
0°00'
5°00'S
33.0
34.0
34.6
34.8
34.9
>35.0
34.7
34.8
34.9
34.6


DEPTH (m)
0
200
400
600
800
2°00'N
0°00'
4°00'S
STATION NO.
15
13
11
8
7
5
KM FROM STATION 15
0
200
400
600
Sigma-θ
(along 92°W)
I-Line
12-14 April 1985
22.5
23.0
23.5
24.0
25.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0


DEPTH (m)
0
200
400
600
800
STATION NO.
16
17
19
21
23
25
2°00'N
0°00'
5°00'S
KM FROM STATION 16
0
200
400
600
800
< 23.0
23.5
25.0
25.5
26.0
26.2
26.4
26.5
26.6
26.8
27.0
< 23.0
Sigma - θ
(along 95° W)
G - Line
15 - 17 April 1985


STATION NO.
30
29
27
25
DEPTH (m)
0
200
400
600
800
1000
1200
KM FROM STATION 30
0
200
400
600
22.5
23.0
24.0
25.5
25.0
26.0
26.2
26.4
26.5
26.6
26.8
27.0
Sigma-θ
(along 5°S)
B-Line
17-19 April 1985


Sigma - θ
(along 85° W)
A - Line
19 - 21 April 1985
DEPTH (m)
KM FROM STATION 39
STATION NO.
2°00'N
0°00'
2°00'S
20.5
22.0
23.0
24.0
25.0
26.0
24.5
26.2
26.4
26.6
26.5
26.8
27.0